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Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	4,467,693	2,442,172	2,876,972	2,650,493	2,397,340	2,148,428	1,684,842
0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)	822,729	0	0	0	0	0	0
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development	2,430,207	2,333,987	2,354,003	467,800	510,300	0	0
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development	0	72,559	354,948	1,394,803	1,186,732	500,963	340,922
0008 Ground-Based Midcourse Defense (GMD) Block 2010	0	0	118,900	706,000	669,800	1,575,388	1,310,381
0709 AEGIS Ballistic Missile Defense Block 2004	901,299	0	0	0	0	0	0
0809 AEGIS Ballistic Missile Defense Block 2006	121,574	0	0	0	0	0	0
0402 Japanese Cooperative Program	69,489	0	0	0	0	0	0
0602 Program-Wide Support	122,395	35,626	49,121	81,890	30,508	72,077	33,539
Amount Included in PE 0904903D	0	0	0	-1,245,012	-1,079,267	-1,026,445	-1,274,867
Total PE Cost Reflected in R-1	4,467,693	2,442,172	2,876,972	1,405,481	1,318,073	1,121,983	409,975

Note: Per Congressional direction, all funding for Aegis BMD and Japanese Cooperative efforts transfers in FY06 to PE 0603892C, Ballistic Missile Defense Aegis.

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) element of the Ballistic Missile Defense System (BMDS) is a key component of the Initial Defensive Capability (IDC) and all future BMDS Blocks being fielded by MDA. It consists of ground-based interceptors, sensors, and fire control systems fielded in multiple locations. The GMD employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies.

It is largely within this PE and the new Aegis PE that the IDC is fielded. GMD has fielded an IDC capability to address known threats. The midcourse phase of flight offers the most significant leverage to engage the threat. From a time perspective, the midcourse phase is comparatively long thereby allowing defenses extended sensor viewing time and multiple engagement opportunities. The fielded system is limited, intended to support comprehensive development and testing while providing defense of the United States against attack by a limited number of ballistic missiles.

GMD has balanced fielding decisions with a robust development program to deliver the maximum operational capability within the resources provided. The FY07 budget submission emphasizes integration of the GMD element into the BMDS by delivering an increased engagement capability against a broad spectrum of potential threats: 1) the size of the rogue nation threat; 2) the complexity of the rogue nation threat; 3)

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<p>aggressive tactics to circumvent our current posture; and 4) the emergence of new threats. This capability is measured by Engagement Sequence Groups (ESG), which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD Ground-Based Interceptor (GBI) against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. ESGs are addressed separately in the R-2A for each respective block.</p> <p>To address recent GMD flight test failures, the MDA Director commissioned an Independent Review Team (IRT) and a Mission Readiness Task Force (MRTF) to review the GMD test program, examine the cause or causes, and recommend improvement to the current program. The IRT made five key recommendations in February 2005:</p> <ol style="list-style-type: none"> 1). Establish a more rigorous flight readiness certification process 2). Strengthen systems engineering 3). Perform additional ground based qualification testing prior to flight testing 4). Hold contractor functional organizations accountable 5). Assure the GMD program is executable <p>The MRTF leveraged the IRT study and recommended a near term flight and ground test plan and implemented an improved test readiness process, as well as more robust systems engineering and quality processes. The MRTF recommended flight and ground test plan was approved by OSD (AT&L) in June 2005. The MRTF test strategy is to:</p> <ol style="list-style-type: none"> 1). Conduct a structured progression of qualification, ground and flight tests 2). Rigorously manage system configuration and test objectives 3). Incrementally retire risk areas 4). Enforce “test as you fight, fight as you test” discipline <p>The FY07 budget submission accommodates these recommendations.</p> <p>The Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense Capability in Aegis cruisers and destroyers to defend the nation, deployed forces, friends and allies, and to incrementally increase this capability by delivering evolutionary spiral improvements as part of BMDS block upgrades.</p>		

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<p>The Aegis BMD element of the BMDS builds upon the existing Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures deployed in Aegis cruisers and destroyers. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missile (SRBM), Medium-Range Ballistic Missile (MRBM), Intermediate-Range Ballistic Missile (IRBM), and selected long-range class threats in the midcourse phase of flight. Spiral upgrades to both the Aegis BMD Weapon System and the SM-3 configurations will enable Aegis BMD to provide effective, supportable defensive capability against more difficult threats, including Long Range Ballistic Missiles (LRBMs).</p> <p>Aegis BMD is working with the Japan Defense Agency (JDA) on the U.S./Japan Cooperative Research (JCR) project, which is developing advanced missile technologies in four areas: nosecone, Divert and Attitude Control System (DACS), propulsion, and seeker. In addition, the two countries are undertaking an SM-3 Cooperative Development (SCD) program, which consists of a spiral upgrade to the SM-3 Blk IB missile - a 21-inch diameter SM-3 missile (SM-3 Blk II/IIA).</p> <p>As of FY06, funding for Aegis BMD activities transfers to PE 0603892C, Ballistic Missile Defense Aegis. FY05 accomplishments will be shown in this PE.</p> <p><u>A.1 System Element Description</u></p> <p>The Ground-based Midcourse Element of the BMDS consists of Blocks 2004, 2006, 2008, and 2010:</p> <ul style="list-style-type: none"> • Block 2004 (Project 0708) represents the early development and fielding of the IDC including ground-based interceptors, an upgraded Cobra Dane radar, upgraded Early Warning Radars (UEWR), a Sea-Based X-Band (SBX) radar, In-Flight Interceptor Communications System (IFICS) data terminals (IDT), Fire Control and Communication Nodes, and communications networks including fiber and satellite communications systems. • Block 2006 (Project 0808) includes continued development and fielding of ground-based capabilities, integrated testing of the multi-layered BMDS components and addressing the concept of a rotating pool of interceptors to ensure latest capabilities are fielded. The fielding of additional ground-based interceptors, integrating into the upgraded early warning radar (UEWR) and fielding an IDT in Block 2006 broadens the area of coverage of the initial BMDS. Additionally, efforts include the development of enhanced capabilities to detect, track, intercept, and defeat ballistic missile threats. • Block 2008 (Project 0908) includes continued development and fielding of ground-based capabilities, integrated testing of the multi-layered BMDS components and continued development of enhanced ground-based interceptor capabilities, countermeasures mitigation, multi-sensor fusion, and additional GMD Fire Control (GFC) capabilities. 		

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<ul style="list-style-type: none"> The Block 2010 (Project 0008) further supports and expands the continuing development, testing, and fielding of new and evolving BMDS technologies. <p><u>A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)</u></p> <p>The GMD system provides the capability to the Combatant Commanders to engage, in the midcourse phase of flight, ballistic missiles. The contribution of the GMD system is comprised of:</p> <ul style="list-style-type: none"> Sensors: UEWRs: Cobra Dane, Beale and Fylingdales, Sea-Based X-Band Radar (SBX), and the Aegis external system interface Interceptors: On-going interceptor fielding, Orbital Booster Vehicle (OBV) acceleration, and the Exoatmospheric Kill Vehicle (EKV) transition to rate manufacturing Fire Control and Communications: High availability with dedicated communications loop inside fire-control ring, 20,000+ miles of terrestrial / submarine fiber, Nine satellite communications (SATCOM) links, Dual redundant fire control nodes Infrastructure: Operational and support facilities at Fort Greely, Eareckson Air Station, Vandenberg AFB, Beale AFB, Schriever AFB, Fylingdales, U.K., and Adak, AK Physical security including fences, sensors, crash barriers, entry control and lighting <p><u>A.3 Major System Element Goals</u></p> <ul style="list-style-type: none"> Return to Flight Continue to field the system Support and sustain the fielded system Complete development, fielding and transition to alert of Block 2004 Complete development, fielding and transition to Alert of Block 2006 Verify capability by operationally realistic testing Improve BMDS capability through continued development Expand BMDS via increased ESGs and depth of inventory Build an international foundation for missile defense 		

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<u>A.4 Major Events Schedule and Description</u>			
Major Event	Project	Timeframe	Description
Flight Test			
Flight Tests			
FT-1	0808	1Q FY 2006	• Completed DEC 2005
FT-2	0808	3Q FY 2006	• Advanced Discrimination. Flight test with target
FT-3	0808	4Q FY 2006	• Intercept Flight Test
FT-4	0808	1Q FY 2007	• Intercept Flight Test
FT-5	0808	2Q FY 2007	• Intercept Flight Test
FT-6	0808	3Q FY 2007	• Intercept Flight Test
Radar Certification Test			
FT 04-1	0808	2Q FY 2006	• Certification of Beale UEWR Software Upgrade
Other			
Sensors			
Upgrades to Fylingdales EWR	0708	1Q FY 2005	• Fylingdales integration into test bed and LIDS complete (1Q FY 2006)
Integrated/Distributed Ground Tests			
GT 04-2	0808	1Q FY 2006 - 3Q FY 2006	• Phase I Completed December 2005
Capability Enhancement GBIs			
Install #10 GBI - Greely	0708	1Q FY 2006	• Installed 1Q FY 2006
Install #11 GBI - Greely	0708	2Q FY 2006	• Installation scheduled for 2Q FY 2006; weather permitting
Install #12 GBI - Greely	0708	3Q FY 2006	• Installation scheduled for 3Q FY 2006
Install #13 GBI - Greely	0708	3Q FY 2006	• Installation scheduled for 3Q FY 2006
Install #14 GBI - Greely	0708	3Q FY 2006	• Installation scheduled for 3Q FY 2006
LDC Missiles 15-18	0808	4Q FY 2006 - 1Q FY 2007	
Missile Field Construction			
Missile Field 3 (10 Silos)	0808	1Q FY 2007	
GBI 3rd Site Start	0808	2Q FY 2007	
Missile Field I (10 Silos)	0808	4Q FY 2007	
SBX			
SBX Integration	0808	3Q FY 2006	• SBX Integrated with BMDS

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006 PB)	4,501,459	3,266,196	3,945,991
Current President's Budget (FY 2007 PB)	4,467,693	2,442,172	2,876,972
Total Adjustments	-33,766	-824,024	-1,069,019
Congressional Specific Program Adjustments	50,000	-776,939	0
Congressional Undistributed Adjustments	0	-47,085	0
Reprogrammings	-11,128	0	0
SBIR/STTR Transfer	-72,638	0	0
Adjustments to Budget Years	0	0	-1,069,019

FY05 reduction of \$33.766 million includes a Congressional specific program adjustment, MDA reprogrammings and the SBIR/STTR transfer.

FY06 reduction of \$824.024 million includes Congressional specific program adjustments (Sea-based Midcourse Defense Segment and Multiple Kill Vehicles transfers to unique Program Elements) and a portion of the MDA Congressional undistributed adjustment.

FY07 reduction of \$1.069 billion includes follow through with the Congressionally directed Sea-based Midcourse Defense Segment transfer to PE #0603892C and Multiple Kill Vehicle transfer to PE #0603894C and overhead/infrastructure reductions.

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APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603882C Ballistic Missile Defense Midcourse Defense Segment			
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)	822,729	0	0	0	0	0	0
RDT&E Articles Qty	45	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

The GMD Block 2004 effort provided for the fielding of the IDC. The IDC initiative provides missile fields and infrastructure, ground based interceptors, In-Flight Interceptor Communication System (IFICS) Data Terminals (IDT), communication networks, and sensors. The GMD system employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. Block 2004 delivered and fielded the initial infrastructure, fielded the initial increment of interceptors, and provided for initial sustainment infrastructure for the IDC (funded in Project 0808). The Block 2004 was being completed in two phases. The first phase, the initial BMDS Test Bed with a limited defensive capability, was completed on September 30, 2004. The second phase provided an enhanced capability and additional assets that can also be utilized for the BMDS Test Bed. It was completed in December 2005. The IDC/LDC consists of:

Missile Fields and Infrastructure.

- The IDC consists of two (2) missile fields at Fort Greely, AK and operational silos at Vandenberg AFB, CA. The BMDS Test Bed provided for the construction of the first missile field with operating infrastructure at Fort Greely, which was completed in 2004.
- Six (6) common silos, launch site components, and command launch equipment were fielded in the first missile field. The IDC initiative provided for the construction of the second missile field at Fort Greely, which was completed in 2005.
- Ten (10) common silos, launch site components, and command launch equipment were fielded in the second missile field.
- Additionally, IDC provided for the modification of four (4) common silos, launch site components, and command launch equipment at Vandenberg AFB in 2004.

Ground Based Interceptor (GBI).

A GBI consists of a booster and exoatmospheric kill vehicle (EKV).

The IDC consists of up to 20 GBIs. The BMDS Test Bed provided up to ten (10) boosters and five (5) EKVs to field an initial five (5) GBIs at Fort Greely in 2004. The IDC initiative provided an additional ten (10) boosters and fifteen (15) EKVs to field up to ten (10) GBIs by the end of 2004 and up to 20 by the end of 2005. Two (2) of the IDC GBIs were used for flight testing purposes. As a result of MRTF recommendations, four (4) operational GBIs will be used for ground testing purposes. Accordingly, up to 12 GBIs were fielded at Fort Greely, AK by the end of 2005. Two (2) GBIs were fielded at VAFB by the end of 2004.

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<p>In-Flight Data Communications Terminals (IDTs.) Consists of five (5) IDTs at multiple sites.</p> <ul style="list-style-type: none"> • The BMDS Test Bed provided one IDT at Fort Greely, one IDT at Shemya (AK), one IDT at VAFB in 2004 and one onboard IDT on the Sea-Based X-Band Radar. • One IDT is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program. <p>GMD Communications Network (GCN).</p> <ul style="list-style-type: none"> • The GCN consists of fiber optic land lines interconnected to satellite communications, both DSCS and MILSTAR. • The CONUS Net connects Fort Greely and VAFB to the Joint National Integration Center (JNIC) at Schriever AFB as well as Hardware-in-the-Loop facilities in Huntsville. • The BMDS Test Bed provides two (2) GMD Fire Control and Communications (GFC/C) Nodes located at Fort Greely and Schriever AFB. • The Schriever AFB and GCN are also connected to the Cheyenne Mountain Operations Center (CMOC) through remote workstations. • The BMDS Test Bed provides satellite communications systems consisting of DSCS terminals at Fort Greely and Shemya and a MILSTAR terminal at Fort Greely. • An additional DSCS terminal is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program. • All components are integrated into the BMDS C2BMC Element in order to provide the deliberate planning tools and crisis action tools to evolve courses of action based upon a common view of the threat, available global resources, and warning order objectives. <p>Sensors. The IDC consists of radars at multiple sites.</p> <ul style="list-style-type: none"> • The BMDS Test Bed provides for an upgraded Cobra Dane radar on Shemya, an Upgraded Early Warning Radar at Beale AFB in 2004 and a Sea-Based X-Band radar in 2005, and communications interface to the Aegis SPY-1 radars. • The IDC initiative provides for an Upgraded Early Warning Radar at Fylingdales, United Kingdom in 2005. • An additional prototype X-band radar, Ground-Based Radar Prototype (GBR-P), is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the flight test program. <p>Block 2004 provides a robust, flexible Test Bed to support the continuing development and testing of new and evolving BMDS technologies. The Test Bed supports a wide range of flight and ground test scenarios, multiple basing modes, and phenomenology. This multi-part Test Bed leverages initial GMD developmental hardware and software assets to validate the IDC operational concept and to provide increased realism for BMDS testing.</p>		

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<p>The BMDS Test Bed incorporates capabilities to evaluate: countermeasures; a wide range of sea and land-based radar sensors; more realistic test and evaluation through geographically dispersed assets and an operationally representative environment to check out component hardware and software integration, multiple target and interceptor test launch sites, flexible engagement scenarios, full spectrum of testing to demonstrate system performance including distributed, integrated ground testing; enhanced test infrastructure; and validation of construction, transportation, site activation, and logistics concepts supporting future fielding options.</p>			
<u>B. Accomplishments/Planned Program</u>			
	FY 2005	FY 2006	FY 2007
Ground-Based Interceptor (GBI)	9,938	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The Ground-Based Interceptor consists of an Exoatmospheric Kill Vehicle (EKV) and a Boost Vehicle.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Completed silo/interceptor/launch systems ground testing, system level simulation, and verification, validation, and accreditation activities. 			
	FY 2005	FY 2006	FY 2007
Cobra Dane Upgrade	0	0	0
RDT&E Articles (Quantity)	1	0	0
<p>Cobra Dane is an existing radar at Shemya, AK used to detect and track ballistic missile launches. This project upgraded both hardware and software to improve overall performance, execute BMDS tasking and connect to the BMDS.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Test Articles: Acquisition of hardware and software upgrades to the Cobra Dane Radar was initiated in FY 2002 for delivery in FY05.</p> <ul style="list-style-type: none"> Completed final checkout (Initial COBRA DANE upgrade complete). 			

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	FY 2005	FY 2006	FY 2007
GMD Fire Control & Communications	7,003	0	0
RDT&E Articles (Quantity)	1	0	0
<p>The GMD Fire Control and Communications (GFC/C) component enables integrated control and operation of the GMD Element within the BMDS. The communications component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communications System (IFICS). The GCN includes fiber optic land lines connected to satellite communications, both DSCS and Milstar. The DSCS terminals were acquired and installed at Fort Greely and Shemya. The GCN also consists of an existing DSCS terminal at RTS supporting flight test requirements. A Milstar terminal was installed at Fort Greely.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Test Articles: Acquisition of a Milstar terminal for Fort Greely, was initiated in FY 2003 for delivery in FY05.</p> <ul style="list-style-type: none"> • Completed installation of a Milstar terminal at Fort Greely. 			
	FY 2005	FY 2006	FY 2007
Element Engineering and Integration	10,277	0	0
RDT&E Articles (Quantity)	0	0	0
<p>GMD Element Engineering provides engineering and analysis support for building and integration of the components of the 2004 Test Bed. Defines element-level capabilities, test requirements and objectives, and develops element-level assessments. Provides engineering, integration, and operations planning supporting the IDC. Continues the integration of component/element systems and sustains the planning effort for future fielding options. Continues to support and complement the BMDS Systems Engineering capability by providing detailed insight and analysis into component technical and design-specific issues.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Completed system integration test and checkout. 			

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	FY 2005	FY 2006	FY 2007
Element Test & Evaluation (T&E)	2,977	0	0
RDT&E Articles (Quantity)	0	0	0
<p>GMD Test and Evaluation provides critical risk reduction and measurement of system performance for all GMD element components. It utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. The GMD Combined Test Force, under a single unified organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, and minimizes the duplication of test resources and the time required to execute required testing.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Completed Systems Test Readiness Review documentation. 			
	FY 2005	FY 2006	FY 2007
Sea-Based X-Band Radar (SBX)	162,963	0	0
RDT&E Articles (Quantity)	2	0	0
<p>The SBX development was initiated in FY 2002. The SBX provides high-resolution tracking and discrimination data to the GMD fire control, thereby significantly enhancing BMDS performance. The Sea-Based X-Band Radar (SBX) is a Midcourse Defense sensor that will support the IDC and Integrated Flight Tests and will provide the capability of exercising all GMD sensor functions (sensor task plan, acquisition, track, discrimination, in-flight target update, target object map and kill assessment). The SBX includes an IFICS Data Terminal and GCN. The SBX is a relocatable, phased-array radar. The ability of the SBX to be relocated enables full use of extended test range capabilities for all land and air target launches, provides more realistic siting, and facilitates operationally realistic testing. The SBX Payloads (XBR, IDT, GCN) are mounted on a modified, sea-going, semi-submersible platform similar to the oil drilling platforms currently in use worldwide.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Test Articles: Acquisition of one (1) Sea-Based X-Band Radar (SBX) was initiated in FY 2002 for delivery in FY05. Acquisition of one (1) IFICS Data Terminal (IDT), fixed to the SBX platform, was initiated in FY 2002 for delivery in FY05.</p> <ul style="list-style-type: none"> Completed installation of radar electronic components. Completed installation of IDT and GCN components. 			

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<ul style="list-style-type: none"> Completed acquisition and installation of operations and support equipment for platform. Completed integration and checkout of Sea-based X-band Radar. 			
	FY 2005	FY 2006	FY 2007
Beale Early Warning Radar Upgrade	18,957	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The Beale Early Warning Radar (EWR) is an existing large, fixed, phased-array surveillance radar used to detect, track, and count individual targets early in their trajectory. The planned Beale upgrades provide the capability of not only detecting, but also providing precise tracking early enough to significantly expand the battlespace for the ground-based interceptors. The Beale upgrades include both hardware and software enhancements to improve overall performance, execute BMDS functionally and, connect to the BMDS.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Continued Flight and Ground Test support. Continued development and fielding of UEWR Software Builds. Completed ITWAA integration and certification 			
	FY 2005	FY 2006	FY 2007
Block 2004 Initial Defensive Capability (UEWR)	40,837	0	0
RDT&E Articles (Quantity)	1	0	0
<p>The Fylingdales UEWR provides GMD fire control access and increased early warning capability for potential threat objects launched from north and east of CONUS. Processor upgrades, along with the associated GMD Communications Network (GCN) connectivity, are planned for full implementation of the Fylingdales UEWR by the end of 2005.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Completed acquisition of UEWR hardware. Completed installation of UEWR hardware. Completed installation of UEWR software. Completed Integrated Tactical Warning and Attack Assessment and certification for the UEWR. 			

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	FY 2005	FY 2006	FY 2007
Block 2004 Initial Defensive Capability (GBI)	439,576	0	0
RDT&E Articles (Quantity)	40	0	0
<p>The Ground-Based Interceptor consists of an Exoatmospheric Kill Vehicle (EKV) and a Booster Vehicle. These Interceptors represent an enhancement to the basic Block 2004 of five (5) Ground Based Interceptor (GBI) Test Bed capability by adding: Eleven (11) GBIs at Fort Greely and up to four (4) GBIs at Vandenberg AFB (VAFB). This effort provides the United States with a fielded Initial Defensive Capability (IDC) against ballistic missile threats. Note: Two (2) operational GBI's will be used for flight testing purposes. And, four (4) operational GBI's will be used for ground testing purposes as recommended by the MRTF.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Articles: Acquisition of up to 10 EKV's and up to 10 Boosters was initiated in FY 2004 for delivery in FY05. Acquisition of 10 silos and 10 sets of Launch Station Equipment (LSE) racks was initiated in FY 2004 for delivery in FY05.</p> <ul style="list-style-type: none"> • Completed acquisition and installation of up to 10 Boosters for Fort Greely. • Completed acquisition and installation of up to 10 EKV's for Fort Greely. • Completed acquisition and installation of common silos for Fort Greely. 			
	FY 2005	FY 2006	FY 2007
Block 2004 Initial Defensive Capability (RDT&E Construction)	130,201	0	0
RDT&E Articles (Quantity)	0	0	0
<p>This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data. The 1391s have been updated to reflect the latest construction costs for the IDC</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Completes construction of 10 common silos and supporting facilities at Fort Greely. • Completes facilities construction for UEWB [Fylingdales, UK]. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p><u>D. Acquisition Strategy</u></p> <p>GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy has been to build and field an initial capability of the BMDS by Dec 2004, while continuing RDT&E work and spiral upgrades such that some number of GMD components will remain part of the BMDS Test Bed, even after being fielded as part of the initial capability. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Ground-Based Interceptor (GBI)								
Ground-Based Interceptor (GBI)	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	229,475	0	N/A	0	N/A	229,475
Cobra Dane Upgrade								
Cobra Dane Upgrade	SS/CPAF	Boeing/ AL/AK/CA	34,812	0	N/A	0	N/A	34,812
GMD Fire Control & Communications								
GMD Battle Management (Fire Control) & Comms	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	53,002	0	N/A	0	N/A	53,002
Element Engineering and Integration								
Element Engr & Integration	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	40,410	0	N/A	0	N/A	40,410
Element Test & Evaluation (T&E)								
Element T&E	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	17,714	0	N/A	0	N/A	17,714
Sea-Based X-Band Radar (SBX)								
Sea-Based X-Band Radar (SBX)	SS/CPAF	Boeing/ AL/AK/TX	538,479	0	N/A	0	N/A	538,479
Beale Early Warning Radar Upgrade								
Beale UEWR	SS/CPAF	Boeing/ AL/CA	50,585	0	N/A	0	N/A	50,585

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY					R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					0603882C Ballistic Missile Defense Midcourse Defense Segment			

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Block 2004 Initial Defensive Capability (UEWR)								
IDC (UEWR & IDT)	SS/CPAF	Boeing/ AL/AK/CA	107,502	0	N/A	0	N/A	107,502
Block 2004 Initial Defensive Capability (GBI)								
IDC (GBI)	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	795,079	0	N/A	0	N/A	795,079
Subtotal Product Development			1,867,058	0		0		1867058

Remarks

II. Support Costs Cost (\$ in Thousands)











Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Block 2004 Initial Defensive Capability (RDT&E Construction)								
Construction	MIPR	COE/AK/CA	251,034	0	N/A	0	N/A	251,034
Subtotal Support Costs			251,034	0		0		251034

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								
Remarks								
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services								
Remarks								
Project Total Cost			2,118,092	0		0		2,118,092
Remarks								
The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.								

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sensors																												
Upgrades to Fylingdales EWR	▲																											
Cobra Dane Upgrade			▲																									
SBX Delivered				▲																								
Capability Enhancement GBIs																												
Install #6 GBI - Greely	▲																											
Install #7 GBI - VAFB	▲																											
Install #8 GBI - VAFB	▲																											
Install #9 GBI - Greely			▲																									
Install #10 GBI - Greely					▲																							
Install #11 GBI - Greely						▲																						
Install #12 GBI - Greely							▲																					
Install #13 GBI - Greely							▲																					
Install #14 GBI - Greely							▲																					
Legend																												
		Significant Event (complete)												Significant Event (planned)														
		Milestone Decision (complete)												Milestone Decision (planned)														
		Element Test (complete)												Element Test (planned)														
		System Level Test (complete)												System Level Test (planned)														
		Complete Activity												Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Sensors							
Upgrades to Fylingdales EWR	1Q						
Cobra Dane Upgrade	3Q						
SBX Delivered	4Q						
Capability Enhancement GBIs							
Install #6 GBI - Greely	1Q						
Install #7 GBI - VAFB	1Q						
Install #8 GBI - VAFB	1Q						
Install #9 GBI - Greely	3Q						
Install #10 GBI - Greely		1Q					
Install #11 GBI - Greely		2Q					
Install #12 GBI - Greely		3Q					
Install #13 GBI - Greely		3Q					
Install #14 GBI - Greely		3Q					

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603882C Ballistic Missile Defense Midcourse Defense Segment			
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development	2,430,207	2,333,987	2,354,003	467,800	510,300	0	0
RDT&E Articles Qty	10	43	20	0	0	0	0
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>Block 2004/2006 (Project 0808) provides the funding for flight and ground testing; funding for the fielding of the second increment of the Initial Defensive Capability (IDC), also referred to as Missile Defense Plan II, with additional interceptors (up to 10), and In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs); the sustainment and support for the fielded capability; and the continuing development and fielding of capabilities to detect, track, intercept, and defeat ballistic missile threats. Block 2006 also includes continuing development and evolution of the wide range of software supporting the IDC and assessment, test, and evaluation of alternative GBI basing options.</p> <p>The GMD Block 2004/ 2006 development program provides an integrated development and test program of more capable interceptors (both boost and kill vehicles), sensors, battle management technologies, and GMD Fire Control and Communications systems and infrastructure. Block 2006 provides the following:</p> <ul style="list-style-type: none"> • The EKV is a Hit-to-Kill payload designed to acquire, discriminate, track, and intercept targets in the midcourse phase of flight. The key components and technologies of the EKV include the acquisition and tracking sensors, the on-board maneuvering system, and the on-board vehicle C3 systems. Component development is on going and is demonstrated as part of the block improvement process in the Integrated Flight Test program. • The sensor development program is a mix of enhancements to existing radar assets and development of new radar capabilities. The program will continue the software upgrades to the Early Warning Radars at Beale and Fylingdales, and the Cobra Dane radar at Shemya. • A broad range of X-Band Radar (XBR) technologies will continue in development to support the SBX. • The Ground Based Radar Prototype (GBR-P) located at the Ronald Reagan Test Site (RTS), at Kwajalein, is being used as part of the Integrated Flight Test program, and serves as a demonstration platform for these evolving radar technologies. • The GMD Fire Control and Communications component is an integrated communications network of nodes, to enable the GMD element to function as part of the BMDS. This includes: <ul style="list-style-type: none"> ○ Various communications links (e.g., CONUS ring, Alaska leased lines and Satellite Communications (SATCOM) to Shemya, Fort Greely, and IDTs. ○ GMD Fire Control and Communications Nodes [Fort Greely and Joint National Integration Center (JNIC) with remote operator workstations at Cheyenne Mountain Operations Center (CMOC)] 							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment
<ul style="list-style-type: none"> ○ IDTs at various locations. ○ GFC&C development initiatives continue on these technologies and components to meet future block capability requirements. This effort will be developed as part of the BMDS overarching C2BMC architecture. <p>One of the most significant activities supported by this project is the component and systems level testing. The integrated flight and ground tests; the component level developmental testing; modeling and simulation; and the Verification, Validation, and Accreditation testing are critical to the successful fielding of all IDC components. The GMD test program is designed to demonstrate a broad range of GMD component development efforts. Incremental capabilities include multiple launches against multiple threat targets as the block capabilities mature. Components under test include boosters, EKV's, launch infrastructure, sensors, and interfaces with other BMDS elements. Additionally, the test program will incorporate Aegis Weapon System (AWS) radars to support GMD integrated flight test program. The test regimen will significantly expand to include operational interceptors both for ground and flight testing. Interceptors will subsequently be replaced with newer ones from the ongoing manufacturing line to ensure the most technically capable GBI inventory while ensuring backward compatibility to the maximum extent possible.</p> <p>ESGs are embedded into the GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI testing; EKV and GMD fire control upgrades; and improved GBIs enable improvements to all ESGs and increase warfighter confidence.</p> <p>GMD demonstrated the capability to execute 3 Block 2004/2006 ESGs:</p> <ul style="list-style-type: none"> • Engage on Cobra Dane (CD) & UEWR • Engage & Launch on Aegis • Engage & Launch on FBX-T (Search and Track) <p>Block 2006 incorporates additional BMDS ESGs:</p> <ul style="list-style-type: none"> • Engage on Cobra Dane (CD) & UEWR (Mod 1) • Launch on CD & UEWR • Engage & Launch on FBX-T • Engage (Mod1) & Launch on SBX 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<u>B. Accomplishments/Planned Program</u>			
	FY 2005	FY 2006	FY 2007
Ground Based Interceptor (GBI)	583,666	523,708	506,204
RDT&E Articles (Quantity)	4	6	8
<p>The GBI development program funds the development of booster and EKV technologies. It also provides developmental assets for flight-testing. GMD has successfully demonstrated a hit-to-kill capability in five (5) separate flight tests.</p> <p>FY05 Accomplishments: RDT&E Test Articles: Acquisition of 2 GBI (includes both EKV and boost vehicle) was initiated in FY 2003 for delivery in FY05.</p> <ul style="list-style-type: none"> • Initiated acquisition of 4 GBIs (includes both EKV and boost vehicle) • Continued Silo/GBI/launch systems ground testing, system level simulation, and Verification, Validation, and Accreditation activities. • Continued interceptor, ground/system tests, and Integrated Flight Tests. • Continued modeling and simulation development. • Completed acquisition of 2 GBIs (EKV and boost vehicle) initiated in FY03 for delivery in FY05. • Continued acquisition of 3 GBIs (EKV and boost vehicle) initiated in FY04 for delivery in FY06. <p>FY06 Planned Program: RDT&E Test Articles: Acquisition of 3 GBIs (includes both EKV and boost vehicle) was initiated in FY 2004 for delivery in FY06.</p> <ul style="list-style-type: none"> • Initiates acquisition of 6 GBIs (includes both EKV and boost vehicle) for delivery in FY08. Note. Four of these GBIs will be acquired for MRTF replacement requirements. • Continues Silo/GBI/launch systems ground testing, system level simulation, and Verification, Validation, and Accreditation activities. • Continues interceptor, ground/system tests, and Integrated Flight Tests. • Continues modeling and simulation development. • Continues acquisition of 4 GBIs (includes both EKV and boost vehicle) initiated in FY05. • Completes acquisition of 3 GBIs (includes both EKV and boost vehicle) initiated in FY04. • Initiates GBI producibility / reliability improvements. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY07 Planned Program: RDT&E Test Articles: Acquisition of 4 GBIs (includes both EKV and boost vehicle) was initiated in FY05 for delivery in FY07.</p> <ul style="list-style-type: none"> Initiates acquisition of 4 GBIs (includes both EKV and boost vehicle) for delivery in FY09. Continues Silo/GBI/launch systems ground testing, system level simulation, and Verification, Validation, and Accreditation activities. Continues interceptor, ground/system tests, and Integrated Flight Tests. Continues modeling and simulation development. Completes acquisition of 4 GBIs (includes both EKV and boost vehicle) initiated in FY05. Continues acquisition of 6 GBIs (EKV and boost vehicle) initiated in FY06. Completes GBI producibility / reliability improvements. 			
	FY 2005	FY 2006	FY 2007
X Band Radar Technology Development	79,762	88,820	72,321
RDT&E Articles (Quantity)	1	0	1
<p>X-Band radar technologies provide high-resolution tracking and discrimination data to the GMD fire control and subsequently the EKV by way of the in-flight target update and target object map, thereby significantly improving the tracking and discrimination capabilities of the system. This effort develops highly sophisticated software algorithms to enhance target acquisition and discrimination, and material and electronic component enhancements to improve power output and sensitivity. This technology forms the basis for the SBX.</p> <p>FY05 Accomplishments: RDT&E Test Articles: Acquisition of XBR software build 2.2 initiated in FY 2003 and delivered in FY05</p> <ul style="list-style-type: none"> Continued the development of XBR Software. Continued flight and ground test support. Continued operation and maintenance of GBR-P in support of the BMDS Flight Test Program and targets of opportunity. Continued the planning, assessment and evaluation of future X- Band technologies, including technology insertion (Project Hercules). Initiated Primary Support Base development for future fielding options for the Sea-Based X-Band Radar. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
FY06 Planned Program:			
<ul style="list-style-type: none">Continues the development of XBR software.Continues flight and ground test support.Supports a Radar Certification Flight (RCF).Continues the planning, assessment and evaluation of future X- Band technologies, including technology insertion (Project Hercules).Completes Primary Support Base development for the Sea-Based X-Band Radar.			
FY07 Planned Program:			
<ul style="list-style-type: none">Completes development of XBR software build 3.1.Continues flight and ground test support.Continues the planning, assessment and evaluation of future X- Band technologies, including technology insertion (Project Hercules).			
	FY 2005	FY 2006	FY 2007
Upgraded Early Warning Radar (UEWR) Development	73,354	79,773	50,120
RDT&E Articles (Quantity)	1	0	0
Upgraded Early Warning Radars (UEWRs) are large, fixed, phased-array surveillance radars used to detect, track, and count individual targets early in their trajectory. UEWRs are also effective in cueing the higher resolution X-Band radars to the location and trajectory of incoming targets. The planned upgrades provide precise tracking early enough to significantly expand the battlespace for the ground-based interceptors. This program will provide for the development of enhanced EWR software.			
FY05 Accomplishments:			
RDT&E Test Articles: Acquisition of one (1) UEWR software build initiated in FY 2004 and delivered in FY05			
<ul style="list-style-type: none">Continued flight and ground test support.Continued planning for potential future UEWR sites.Delivered UEWR software.			
FY06 Planned Program:			
<ul style="list-style-type: none">Continues flight and ground test support.Supports a radar certification flight.			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
FY07 Planned Program:			
<ul style="list-style-type: none"> Continues flight and ground test support. 			
	FY 2005	FY 2006	FY 2007
Element Engineering & Integration	181,407	176,437	154,747
RDT&E Articles (Quantity)	0	0	0
<p>GMD Element Engineering provides systems engineering and integration essential for the development and fielding of the functional components of the GMD segment of the BMDS. Establishes element-level development requirements in the GMD Capabilities Document and ensures these are allocated to the component specifications. Complements the BMDS systems engineering capability by providing detailed insight and analysis into component technical and design-specific issues during fabrication, element-level integration, testing and fielding. Defines element-level test requirements and objectives and provides element-level analysis and assessments to verify GMD performance. Provides engineering, integration, and operations planning supporting the BMDS, including assessment of future fielding options. Develops and certifies a simultaneous test and operations capability to ensure no impact to safe operations.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Completed Block 2004 Integration Phase 3 (IP-3) Integrated Assessment Review (IAR). Completed Block 2006 Integration Phase 5 (IP-5) Integrated Design Review (IDR). Continued software management and specialty engineering. Continued software verification and validation. Continued modeling and simulation development. Continued system analyses, integration, and verification. Supported integrated ground tests and specialty testing. Conducted pre and post-flight test analyses. Supported integration and testing of launch on Forward-Based Radar ESG. Initiated simultaneous test and operations efforts. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> Completes Block 2006 Integration Phase 5 (IP-5) Integrated Technical Review (ITR). Completes Block 2004/2006 Integration Phase 4 (IP-4) Integrated Assessment Review (IAR). 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> Continues software management and specialty engineering. Continues software verification and validation. Continues modeling and simulation development. Continues system analyses, integration, and verification. Supports integrated ground tests and specialty testing. Conducts pre- and post-flight test analyses. Supports the integration and testing of engage on Forward-Based Radar ESG. Continues simultaneous test and operations efforts. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> Completes Block 2006 Integration Phase 5 (IP-5) Integrated Assessment Review (IAR). Completes Block 2006/2008 Integration Phase 6 (IP-6) Integrated Design Review (IDR). Continues software management and specialty engineering. Continues software verification and validation. Continues modeling and simulation development. Continues system analyses, integration, and verification. Supports integrated ground tests and specialty testing. Conducts pre- and post-flight test analyses. Completes the integration and testing of engage on Forward-Based Radar ESG. Continues simultaneous test and operations efforts. 			
	FY 2005	FY 2006	FY 2007
GMD Fire Control & Communications	218,879	160,062	148,283
RDT&E Articles (Quantity)	1	2	2
<p>The GMD Fire Control and Communications (GFC/C) enables control and operation of the GMD Element as part of the BMDS. The Fire Control sub-component consists of the GMD Fire Control (GFC), Test Exerciser (TEX), and External Systems Interface (ESI). The communications sub-component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communications System (IFICS).</p>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY05 Accomplishments: RDT&E Test Articles: Acquisition of GFC/C software build initiated in FY 2004 and delivered in FY05.</p> <ul style="list-style-type: none"> Continued flight and ground test support. Continued development and installation of GFC and IFICS software builds. Completed development and installation of Test Exerciser software builds. Continued development and installation of GMD software builds in support of GMD capability enhancements. Continued the planning, assessment and evaluation of future GFC/C software and technologies enhancements. Continued software development upgrades. <p>FY06 Planned Program: RDT&E Test Articles: Acquisition of External Systems Interface (ESI) software build initiated in FY 2004 and delivered in FY06. Acquisition of Command Launch Equipment software build was initiated in FY 2004 and delivered in FY06.</p> <ul style="list-style-type: none"> Continues flight and ground test support. Continues the planning, assessment and evaluation of future GFC/C software and technologies enhancements. <p>FY07 Planned Program: RDT&E Test Articles: Acquisition of GFC/C software build initiated in FY05 and delivered in FY07. Acquisition of External Systems Interface (ESI) software build initiated in FY06 and delivered in FY07</p> <ul style="list-style-type: none"> Continues flight and ground test support. Continues the planning, assessment and evaluation of future GFC/C software and technologies enhancements. 			
	FY 2005	FY 2006	FY 2007
Element Test and Evaluation	198,813	321,301	351,393
RDT&E Articles (Quantity)	3	2	3
<p>GMD Test and Evaluation utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources providing critical risk reduction and measurement of system performance for all GMD element components. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. The GMD Combined Test Force, under a single unified</p>			

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment
<p>organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports BMDS level test and evaluation.</p> <p>FY05 Accomplishments: RDT&E Test Articles: Acquisition of 3 targets initiated in FY 2003 for delivery in FY05.</p> <ul style="list-style-type: none"> Continued operation and maintenance of System Test Lab, PCIL, and ISTC-2. Completed installation and implementation of ISTC-1. Continued ground and flight test planning, design, and scheduling. Conducted Integrated Ground Test (IGT) (development). Conducted Distributed Ground Test (DGT). Conducted Integrated Flight Tests. Performed pre- and post-test analyses. Performed analyses to define target requirements. Established Element Test Objectives. <p>FY06 Planned Program: RDT&E Test Articles: Acquisition of 2 targets initiated in FY 2004 for delivery in FY06.</p> <ul style="list-style-type: none"> Continues operation and maintenance of System Test Lab, PCIL, and ISTC-2. Initiates and completes the ISTC-2 upgrade. Continues ground and flight test planning, design, and scheduling. Conducts Integrated Ground Test (IGT) (development). Conducts Distributed Ground Test (DGT). Conducts Integrated Flight Tests. Performs pre- and post-test analyses. Performs analyses to define target requirements. Establishes Element Test Objectives. 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY07 Planned Program: RDT&E Test Articles: Acquisition of 3 targets initiated in FY05 for delivery in FY07.</p> <ul style="list-style-type: none"> • Continues operation and maintenance of System Test Lab, PCIL, and ISTC-2. • Continues ground and flight test planning, design, and scheduling. • Conducts Integrated Ground Test (IGT) (development). • Conducts Distributed Ground Test (DGT). • Conducts Integrated Flight Tests. • Performs pre- and post-test analyses. • Performs analyses to define target requirements. • Establishes Element Test Objectives. 			
	FY 2005	FY 2006	FY 2007
Site Activation	36,459	24,319	29,219
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides a broad range of site design and layout, facility requirements, and environmental management activities.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Continued IDC/ Test Bed support. • Updated IDC/ Test Bed site activation plans. • Continued siting, NEPA, and ESH analysis for Test Bed/IDC. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> • Continues siting, NEPA, and ESH analysis for Block 2006 and future activities. • Initiates construction activities for follow-on Test-Bed upgrade programs. • Updates IDC/Test Bed site activation plans. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Continues siting, NEPA, and ESH analysis for Block 2008 and future activities. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> Initiates construction activities for follow-on Test-Bed upgrade programs. Updates IDO/Test Bed site activation plans. 			
	FY 2005	FY 2006	FY 2007
Program Planning and Management	131,007	109,128	97,570
RDT&E Articles (Quantity)	0	0	0
<p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Provided government program office staff and infrastructure for the management of the GMD Program. Provided technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities. Provided requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution. Continued program management, subcontract management, quality assurance, and technical and testing oversight. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> Provides government program office staff and infrastructure for the management of the GMD Program. Provides technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities. Provides requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution. Continues program management, subcontract management, quality assurance, and technical and testing oversight. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> Provides government program office staff and infrastructure for the management of the GMD Program. Provides technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities. Provides requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution. 			

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> Continues program management, subcontract management, quality assurance, and technical and testing oversight. 			
	FY 2005	FY 2006	FY 2007
Logistics Planning, Production and Protection	259,110	115,699	102,349
RDT&E Articles (Quantity)	0	0	0
<p>GFX represents the materiel and services provided to the prime contractor in support of the GMD development and test efforts. It includes Government Furnished Equipment (GFE), Information (GFI), Facilities (GFF), and Services (GFS) (including communication leases).</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Continued to coordinate, procure, and provide GFX (over 700 line items) to the prime contractor to support Test Bed activation and GMD test program. Continued to provide management efforts to activate a logistics support system to include IDO/ Test Bed site support activations and validation, logistical support requirements, and IDO/ Test Bed readiness reviews. Continued to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDO/ Test Bed sites as required. Continued to provide functional support for production, quality, configuration and change management. Conducted sustainment, fielding, siting, and facility planning. Continued to provide program protection including physical security. Conducted reliability and maintainability analyses. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> Continues to coordinate, procure, and provide GFX (over 700 line items) to the prime contractor to support Test Bed activation and GMD test program. Continues to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDO/ Test Bed sites as required. Continues to provide functional support for production, quality, configuration and change management. Conducts fielding, siting, and facility planning. Continues to provide program protection including physical security. Conducts reliability and maintainability analyses. 			

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Continues to coordinate, procure, and provide GFX (over 700 line items) to the prime contractor to support Test Bed activation and GMD test program. • Continues to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDO/ Test Bed sites as required. • Continues to provide functional support for production, quality, configuration and change management. • Conducts fielding, siting, and facility planning. • Continues to provide program protection including physical security. • Conducts reliability and maintainability analyses. 			
	FY 2005	FY 2006	FY 2007
Sustainment Development Program Phase II (SDP II)	104,750	305,646	544,806
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides for Logistics Support for the GMD Initial Defensive Operations. SDPII will provide a level-of-service consistent with established Engagement Sequence Groups (ESG). SDPII will meet LDO support requirements by providing a flexible and robust support capability that emphasizes support of ESG assets.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Established contract for developing and gathering equipment logistics data. • Completed logistics infrastructure and support concept. • Initiated SDPII program for logistics support and maintenance of IDO. • Initiated minimal initial spare acquisitions. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> • Continues SDPII for logistics support and maintenance of IDC. • Continues logistic infrastructure and support. • Initiates logistics support and basing of the SBX. • Continues minimal initial spare acquisitions. • Initiates mooring of the SBX at Adak, AK. • Initiates on-site sustaining engineering. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY07 Planned Program:</p> <ul style="list-style-type: none"> Continues SDPII for logistics support and maintenance of IDC. Continues logistic infrastructure and support plan. Continues logistics support and basing of the SBX. Continues minimal initial spare acquisitions. Completes mooring of the SBX at Adak, AK. Continues on-site sustaining engineering. 			
	FY 2005	FY 2006	FY 2007
Block 2006 Capability Enhancement Interceptors (GBI)	500,348	389,894	208,991
RDT&E Articles (Quantity)	0	33	5
<p>The Ground-Based Interceptor consists of an Exoatmospheric Kill Vehicle (EKV) and a Booster Vehicle. These Interceptors will enhance the BMDS capability against long and intermediate range ballistic missile attacks by adding ten (10) interceptors.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Initiated acquisition of at least five (5) additional GBIs for Fort Greely. Initiated acquisition of fourteen (14) additional common silos for Fort Greely. Initiated acquisition of fourteen (14) sets of launch support equipment for Fort Greely. <p>FY06 Planned Program:</p> <p>RDT&E Test Articles: Acquisition of at least five (5) GBIs; fourteen (14) common silos and fourteen (14) sets of associated launch support equipment was initiated in FY05 for delivery in FY06.</p> <ul style="list-style-type: none"> Completes acquisition of at least five (5) GBIs for Fort Greely. Completes acquisition of fourteen (14) common silos for Fort Greely. Completes acquisition of fourteen (14) sets of support launch equipment for Fort Greely. Initiates acquisition of at least five (5) additional GBIs for Fort Greely. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p>FY07 Planned Program: RDT&E Test Articles: Acquisition of at least five (5) GBIs for Fort Greely was initiated in FY06 for delivery in FY07.</p> <ul style="list-style-type: none"> • Completes acquisition of at least five (5) GBIs for Fort Greely. 			
	FY 2005	FY 2006	FY 2007
Block 2006 (IDT)	22,385	8,000	2,500
RDT&E Articles (Quantity)	0	0	1
<p>An additional IDT will be acquired to increase our capability to communicate with multiple interceptors from existing launch sites as well as planned launch sites. The IDT will be located at Fort Greely; acquisition will begin in FY05.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated acquisition of an IDT at Fort Greely. <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> • Continues acquisition of an IDT at Fort Greely. <p>FY07 Planned Program:</p> <p>RDT&E Test Articles: Acquisition of one (1) IDT was initiated in FY05 for delivery in FY07.</p> <ul style="list-style-type: none"> • Completes acquisition of an IDT at Fort Greely. 			
	FY 2005	FY 2006	FY 2007
Block 2006 (RDT&E Construction)	40,267	31,200	85,500
RDT&E Articles (Quantity)	0	0	0
<p>This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated construction of 10 additional common silos and supporting facilities at Fort Greely. • Initiated construction of an IDT at Fort Greely. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
FY06 Planned Program:								
<ul style="list-style-type: none">• Completes construction of 10 additional common silos and supporting facilities at Fort Greely.• Continues construction of an IDT at Fort Greely.								
FY07 Planned Program:								
<ul style="list-style-type: none">• Completes construction for the IDT at Fort Greely, AK.								
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

D. Acquisition Strategy

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy has been to build and field an initial capability of the BMDS by Dec 2004, while continuing RDT&E work and spiral upgrades such that some number of GMD components will remain part of the BMDS Test Bed, even after being fielded as part of the initial capability. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Ground Based Interceptor (GBI)								
Ground Based Interceptor (GBI)	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	1,053,607	506,841	1/2Q	489,337	1/2Q	2,049,785
X Band Radar Technology Development								
X Band Radar Technology Development	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	135,985	77,437	1/2Q	59,909	1/2Q	273,331
Upgraded Early Warning Radar (UEWR) Development								
Upgraded Early Warning Radar (UEWR) Development	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	65,997	64,400	1/2Q	34,747	1/2Q	165,144
Element Engineering & Integration								
Systems Engineering & Integration	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	276,869	125,829	1/2Q	26,007	1/2Q	428,705
Concurrent Test & Ops			20,000	21,000	1/2Q	73,000	1/2Q	114,000
FDR Japan - Bundle			0	10,000	1/2Q	6,000	1/2Q	16,000
BMDS Integration			0	0	N/A	28,000	1/2Q	28,000
GMD Fire Control & Communications								
Fire Control & Communications	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	406,534	147,641	1/2Q	135,986	1/2Q	690,161
Element Test and Evaluation								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	104,422	280,344	1/2Q	204,736	1/2Q	589,502
Logistics Planning, Production and Protection								
Logistics Planning, Production and Protection	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	310,103	23,178	1/2Q	14,013	1/2Q	347,294
Block 2006 Capability Enhancement Interceptors (GBI)								
GBI`s	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	233,615	290,094	1/2Q	93,400	1/2Q	617,109
Expansion	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	266,733	89,800	1/2Q	115,591	1/2Q	472,124
European Site Planning	SS/CPAF	Boeing/ AL	0	10,000	1/2Q	0	N/A	10,000
Block 2006 (IDT)								
IDT	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	22,385	8,000	1/2Q	2,500	1/2Q	32,885
Subtotal Product Development			2,896,250	1,654,564		1,283,226		5834040
Remarks								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Ground Based Interceptor (GBI)								
	SS/FP	DCD/ AL	2,384	231	1/2Q	245	1/2Q	2,860
	SS/FP	BAE/ AL	15,788	7,307	1/2Q	4,207	1/2Q	27,302
	SS/FP	TSI/ AL	13,585	3,333	1/2Q	4,685	1/2Q	21,603
	C/CPAF	Sparta/ AL	2,788	0	N/A	0	N/A	2,788
	MIPR	AMCOM/ AL	708	1,684	1/2Q	1,875	1/2Q	4,267
	MIPR	USASMDC/ AL	782	482	1/2Q	500	1/2Q	1,764
	MIPR	GSA/ AL	462	662	1/2Q	700	1/2Q	1,824
	MIPR	Mitre/ DC	582	0	N/A	0	N/A	582
	MIPR	Picatinny/ NJ	225	43	1/2Q	45	1/2Q	313
	MIPR	Crane/ IN	323	32	1/2Q	34	1/2Q	389
	SS/FP	CSC/ AL	13,596	3,093	1/2Q	4,576	1/2Q	21,265
X Band Radar Technology Development								
	C/FP	BAE/ AL	11,690	8,905	1/2Q	6,687	1/2Q	27,282

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	AMCOM/ AL	2,060	913	1/2Q	850	1/2Q	3,823
	MIPR	MIT/LL/ MA	1,300	600	1/2Q	575	1/2Q	2,475
	C/CPAF	GA Tech/ GA	1,130	565	1/2Q	550	1/2Q	2,245
	C/CPFF	Xontech/ AL	592	400	1/2Q	3,750	1/2Q	4,742
Upgraded Early Warning Radar (UEWR) Development								
	SS/CPAF	Ga. Tech/ GA	2,440	1,720	1/2Q	1,569	1/2Q	5,729
	C/CPFF	Xontech/ AL	1,560	880	1/2Q	880	1/2Q	3,320
	C/FP	Mevatec/ AL	24,080	10,753	1/2Q	10,904	1/2Q	45,737
	MIPR	AMCOM/ AL	3,251	2,020	1/2Q	2,020	1/2Q	7,291
Element Engineering & Integration								
	MIPR	SMDC/ AL	2,311	1,285	1/2Q	1,272	1/2Q	4,868
	MIPR	NSWC/ VA	8,410	3,422	1/2Q	4,552	1/2Q	16,384
	MIPR	DTRA/ Ft Belvoir, VA	1,280	749	1/2Q	741	1/2Q	2,770
	MIPR	NAIC/ Wright Patterson, AFB	1,644	843	1/2Q	835	1/2Q	3,322

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	SBIRS SPO/ LA AFB, CA	3,490	0	N/A	0	N/A	3,490
	MIPR	GMD/ AL	4,020	2,186	1/2Q	2,164	1/2Q	8,370
	MIPR	GME Engineering Analysis/ AL	3,768	2,123	1/2Q	2,102	1/2Q	7,993
	MIPR	John Hopkins/ MD	1,500	505	1/2Q	500	1/2Q	2,505
	MIPR	MIT Lincoln Labs/ MA	7,430	2,630	1/2Q	3,767	1/2Q	13,827
	MIPR	Photon Labs/ VA	1,534	843	1/2Q	835	1/2Q	3,212
	SS/CPAF	IDA/ VA	90	0	N/A	0	N/A	90
	C/CPAF	Various/ AL	610	928	1/2Q	919	1/2Q	2,457
	MIPR	JNIC/ CO	7,490	3,782	1/2Q	3,744	1/2Q	15,016
	MIPR	ARES/ CA	609	312	1/2Q	309	1/2Q	1,230
GMD Fire Control & Communications								
	MIPR	NSWC/ Dahlgren, VA	6,804	3,185	1/2Q	3,061	1/2Q	13,050
	FFRDC	MITRE/ HSV, AL	2,454	1,307	1/2Q	1,307	1/2Q	5,068
	C/FP	TSI/ HSV, AL	1,263	1,250	1/2Q	1,250	1/2Q	3,763

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	C/CPAF	SPARTA/ HSV, AL	6,619	3,540	1/2Q	3,540	1/2Q	13,699
	C/FP	BAE Systems/ HSV, AL	401	180	1/2Q	180	1/2Q	761
	C/FP	Gray Sys/ HSV, AL	1,657	850	1/2Q	850	1/2Q	3,357
	C/CPAF	CSC/ Arlington, VA	3,110	1,350	1/2Q	1,350	1/2Q	5,810
	C/CPAF	Northup/ COS, CO	759	759	1/2Q	759	1/2Q	2,277
	MIPR	Various	225	0	N/A	0	N/A	225
Site Activation								
	C/CPFF	CSC/ AL	6,350	2,162	1/2Q	1,933	1/2Q	10,445
	MIPR	OGA/ Various	5,330	1,564	1/2Q	2,176	1/2Q	9,070
	MIPR	USACE/ AL	7,133	1,587	1/2Q	1,892	1/2Q	10,612
	C/CPFF	CSC/ AL	6,071	2,105	1/2Q	2,105	1/2Q	10,281
	C/CPFF	L3 Communications/ AL	2,678	1,339	1/2Q	1,339	1/2Q	5,356
	C/CPFF	TSI/ AL	1,728	864	1/2Q	864	1/2Q	3,456
	C/CPFF	CSC/ AL	15,715	4,791	1/2Q	6,629	1/2Q	27,135
	C/CPFF	CSC/ AL	3,922	1,363	1/2Q	1,975	1/2Q	7,260

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	C/CPFF	L3 Communications/ AL	4,400	2,197	1/2Q	2,200	1/2Q	8,797
	MIPR	OGA/ Various	5,601	1,077	2Q	1,077	1/2Q	7,755
	MIPR	USARAK/ AK	6,306	2,512	1/2Q	4,271	1/2Q	13,089
	C/CPFF	BAE/ AL	8,567	2,309	1/2Q	2,309	1/2Q	13,185
	C/CPFF	BAE/ AL	898	449	1/2Q	449	1/2Q	1,796
Program Planning and Management								
SPT DC	C/CPAF	CSC/ VA	183,508	65,874	1/2Q	54,316	1/2Q	303,698
SPT HSV	C/CPAF	CSC/ AL	51,383	43,254	1/2Q	43,254	1/2Q	137,891
TRADOC System Manager	MIPR	SMDC/ AL	30,393	0	N/A	0	N/A	30,393
Logistics Planning, Production and Protection								
Logistics	C/CPFF	L3 Communications/ AL	7,391	2,816	1/2Q	2,816	1/2Q	13,023
	C/CPFF	BAE Systems/ AL	1,262	631	1/2Q	631	1/2Q	2,524
	C/CPFF	CSC/ AL	1,884	942	1/2Q	942	1/2Q	3,768

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	C/CPFF	TSI/ AL	2,622	1,311	1/2Q	1,311	1/2Q	5,244
	C/CPFF	SPARTA/ AL	920	460	1/2Q	460	1/2Q	1,840
	C/CPFF	CIRRUS/ AL	998	499	1/2Q	499	1/2Q	1,996
	MIPR	MMC/ AL	522	261	1/2Q	261	1/2Q	1,044
	MIPR	ARL/ MD	904	400	1/2Q	400	1/2Q	1,704
	MIPR	Brooks AFB/ TX	296	100	1/2Q	100	1/2Q	496
	MIPR	NSWC/ FL	426	34	1/2Q	34	1/2Q	494
GFX	MIPR	SPAWAR/ CA	1,700	895	1/2Q	895	1/2Q	3,490
	MIPR	AMCOM/ AL	2,102	1,103	1/2Q	1,103	1/2Q	4,308
	MIPR	DISA/ VA	61,922	9,783	1/2Q	9,783	1/2Q	81,488
	MIPR	JSC/ MD	500	250	1/2Q	250	1/2Q	1,000
	MIPR	JNIC/ CO	5,039	1,865	1/2Q	1,865	1/2Q	8,769
	C/CPAF	Boeing/ AL	2,465	650	1/2Q	650	1/2Q	3,765
	MIPR	Hill AFB/ UT	260	130	1/2Q	130	1/2Q	520

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	AMCOM/ AL	1,350	650	1/2Q	650	1/2Q	2,650
	MIPR	NSA/ MD	2,771	500	1/2Q	500	1/2Q	3,771
	MIPR	NIST/ OH	3,370	1,370	1/2Q	1,370	1/2Q	6,110
	MIPR	L3 Communications/ AL	8,065	4,275	1/2Q	4,275	1/2Q	16,615
	MIPR	SMDC/ AL	21,945	5,200	1/2Q	5,200	1/2Q	32,345
	MIPR	611th / AK	18,496	5,000	1/2Q	5,000	1/2Q	28,496
	MIPR	SMDC/ AL	5,574	1,500	1/2Q	1,500	1/2Q	8,574
	MIPR	VAFB/ CA	4,856	2,500	1/2Q	2,500	1/2Q	9,856
	MIPR	CCPs/ Various	1,500	750	1/2Q	750	1/2Q	3,000
	MIPR	Various/ Various	521	150	1/2Q	150	1/2Q	821
	MIPR	Ft Drum/ NY	0	957	1/2Q	957	1/2Q	1,914
Production	SS/CPFF	TSI/ AL	237	125	1/2Q	125	1/2Q	487
	SS/CPFF	BAE Systems/ AL	7,728	6,722	1/2Q	6,722	1/2Q	21,172
	SS/CPFF	COLSA/ AL	1,230	625	1/2Q	625	1/2Q	2,480

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPFF	CSC/ AL	580	295	1/2Q	295	1/2Q	1,170
	MIPR	AMREDC/ AL	3,210	1,635	1/2Q	1,635	1/2Q	6,480
Protection	SS/CPFF	TAMSCO/ AK	9,118	1,026	1/2Q	1,026	1/2Q	11,170
	SS/CPAF	Boeing/ AL	1,535	0	N/A	0	N/A	1,535
	SS/CPFF	SDC/ AL	2,290	1,545	1/2Q	1,545	1/2Q	5,380
	SS/CPFF	US Marshall Service/ TX	404	0	N/A	0	N/A	404
	SS/CPFF	C&A/ AL	10,674	4,355	1/2Q	4,355	1/2Q	19,384
Information Technology	SS/CPFF	SAIC/ AL	12,305	6,751	1/2Q	6,751	1/2Q	25,807
	SS/CPFF	BAE System/ AL	2,826	1,363	1/2Q	1,363	1/2Q	5,552
	MIPR	Various/ Various	5,385	2,598	1/2Q	2,598	1/2Q	10,581
	MIPR	Various/ Various	8,517	2,610	1/2Q	2,610	1/2Q	13,737
TSM	SS/MIPR	SMDC/ AL & DC	0	8,185	1/2Q	4,000	1/2Q	12,185
JNIC (GML)	SS/CPAF	JNIC/ CO	0	9,704	1/2Q	9,704	1/2Q	19,408
Sustainment Development Program Phase II (SDP II)								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPAF	Boeing/ AL/AK/CA	104,750	305,646	1/2Q	544,806	1/2Q	955,202
Block 2006 (RDT&E Construction)								
Facilities Construction	MIPR	COE/ AK	40,267	31,200	1/2Q	85,500	1/2Q	156,967
Subtotal Support Costs			877,504	638,466		924,120		2440090
Remarks								
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Element Test and Evaluation								
Combined Test Force (CTF)	MIPR	SMDC/ AL	11,872	0	N/A	0	N/A	11,872
	MIPR	OTAs/ Various	13,534	0	N/A	0	N/A	13,534
	MIPR	VAFB/ CA	888	437	1/2Q	447	1/2Q	1,772
	MIPR	SNL/ NM	350	343	1/2Q	350	1/2Q	1,043
	MIPR	NAVSEA/ MD	666	395	1/2Q	375	1/2Q	1,436
	MIPR	SMDC/ AL	825	442	1/2Q	450	1/2Q	1,717
	MIPR	Kirtland, AFB/ NM	685	320	1/2Q	340	1/2Q	1,345

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	VAFB/ CA	1,047	520	1/2Q	546	1/2Q	2,113
	MIPR	RTS/ Kwajalein	370	0	N/A	0	N/A	370
	MIPR	RTS/ Kwajalein	4,852	0	N/A	0	N/A	4,852
	C/CPFF	COLSA/ AL	10,816	2,915	1/2Q	2,915	1/2Q	16,646
	C/CPFF	COLSA/ AL	3,176	2,730	1/2Q	1,730	1/2Q	7,636
	C/CPFF	ELMCO/ AL	1,547	990	1/2Q	990	1/2Q	3,527
	C/CPFF	IEC/ CA	5,944	3,822	1/2Q	2,822	1/2Q	12,588
	C/CPFF	BAE Systems/ AL	3,051	2,130	1/2Q	2,080	1/2Q	7,261
	C/CPFF	BAE Systems/ AL	3,236	1,700	1/2Q	1,060	1/2Q	5,996
	C/CPFF	COLSA/ AL	5,061	813	1/2Q	813	1/2Q	6,687
	C/CPFF	COLSA/ AL	7,751	4,915	1/2Q	3,295	1/2Q	15,961
	C/CPFF	COLSA/ AL	864	432	1/2Q	500	1/2Q	1,796
	C/CPFF	AMTEC/ AL	2,359	1,744	1/2Q	3,010	1/2Q	7,113
	C/CPFF	CAS/ AL	2,072	1,550	1/2Q	2,095	1/2Q	5,717

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	C/CPFF	CSC/ AL	446	238	1/2Q	288	1/2Q	972
	C/CPFF	IEC/ CA	220	0	N/A	0	N/A	220
	C/TM	AMTEC/ AL	500	723	1Q	823	1/2Q	2,046
	MIPR	AMCOM/ AL	2,900	2,250	1/2Q	4,345	1/2Q	9,495
	C/CPFF	L3 Communications/ AL	7,493	5,387	1/2Q	5,387	1/2Q	18,267
	MIPR	AMCOM/ AL	1,780	0	N/A	2,012	1/2Q	3,792
	C/CPFF	BAE Systems/ AL	8,286	6,100	1/2Q	4,208	1/2Q	18,594
	MIPR	Various/ AL	5,003	61	1/2Q	76	1/2Q	5,140
Targets	MIPR	MDA/ AL	103,479	0	1/2Q	105,700	1/2Q	209,179
Subtotal Test and Evaluation			211,073	40,957		146,657		398687
Remarks								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis					Date February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services								
Remarks								
Project Total Cost			3,984,827	2,333,987		2,354,003		8,672,817
Remarks The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.								

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																												
IFT13C	▲																											
IFT-14		▲																										
FT-1					▲																							
FT-2						▲																						
FT-3							▲																					
FT-4								▲																				
FT-5									▲																			
FT-6										▲																		
FT-7a/b (Salvo)												▲																
FT-8													▲															
FTG 08-4															▲													
FTG 08-5a/b (Salvo)																▲												
FTG 08-6																	▲											
FTG 10-1																		▲										
FTG 10-2a/b (Salvo)																			▲									
FTG 10-3																						▲						
Legend																												
▲ Significant Event (complete)														▲ Significant Event (planned)														
★ Milestone Decision (complete)														★ Milestone Decision (planned)														
◆ Element Test (complete)														◆ Element Test (planned)														
▼ System Level Test (complete)														▼ System Level Test (planned)														
▲ Complete Activity														▲ Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																												
FTG 10-5a/b (Salvo)																												▲
FTG 10-6																												▲
Radar Certification Test																												
FT 04-1						▲																						
Integrated/Distributed Ground Tests																												
GT 04-1a (Run For Record)					▲																							
GT 04-2					▲	—	▲	▲																				
GT 04-1b (Run For Record)							▲																					
IGT 7									▲																			
GT 04-4										▲																		
GT 04-3													▲															
DGT (FY08)															▲													
IGT (FY08)																	▲											
DGT (FY09)																			▲									
IGT (FY09)																					▲							
DGT (FY10)																						▲						
Legend																												
▲ Significant Event (complete)														▲ Significant Event (planned)														
★ Milestone Decision (complete)														★ Milestone Decision (planned)														
◆ Element Test (complete)														◆ Element Test (planned)														
▼ System Level Test (complete)														▼ System Level Test (planned)														
▲—▲ Complete Activity														▲—▲ Planned Activity														

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Date

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile

APPROPRIATION/BUDGET ACTIVITY

R-1 NOMENCLATURE

RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)

0603882C Ballistic Missile Defense Midcourse Defense Segment

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Integrated/Distributed Ground Tests																												
IGT (FY10)																												
DGT (FY11)																												
IGT (FY11)																												
Missile Field Construction																												
Missile Field 3 (10 Silos)																												
GBI 3rd Site Start																												
Missile Field 1 (MEB)																												
Missile Field I (10 Silos)																												
Capability Enhancement GBIs																												
LDC Missiles 10-14																												
LDC Missiles 15-18																												
LDC Missiles 19-22																												
LDC Missiles 23-28																												
SBX																												
SBX Integration																												
	<div><div><div><div>▲</div><div>★</div><div>◆</div><div>▼</div><div>▲▼</div></div><div><div>Significant Event (complete)</div><div>Milestone Decision (complete)</div><div>Element Test (complete)</div><div>System Level Test (complete)</div><div>Complete Activity</div></div><div><div>△</div><div>☆</div><div>◇</div><div>▽</div><div>△▽</div></div><div><div>Significant Event (planned)</div><div>Milestone Decision (planned)</div><div>Element Test (planned)</div><div>System Level Test (planned)</div><div>Planned Activity</div></div></div></div>																											

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Flight Tests							
IFT13C	1Q						
IFT-14	2Q						
FT-1		1Q					
FT-2		3Q					
FT-3		4Q					
FT-4			1Q				
FT-5			2Q				
FT-6			3Q				
FT-7a/b (Salvo)				1Q			
FT-8				3Q			
FTG 08-4					1Q		
FTG 08-5a/b (Salvo)					3Q		
FTG 08-6					4Q		
FTG 10-1						1Q	
FTG 10-2a/b (Salvo)						2Q	
FTG 10-3							1Q
FTG 10-5a/b (Salvo)							3Q
FTG 10-6							4Q
Radar Certification Test							
FT 04-1		2Q					
Integrated/Distributed Ground Tests							
GT 04-1a (Run For Record)		1Q					
GT 04-2		1Q-3Q					
GT 04-1b (Run For Record)		3Q					
IGT 7		4Q					
GT 04-4			1Q				
GT 04-3			4Q				
DGT (FY08)				1Q			
IGT (FY08)				4Q			
DGT (FY09)					1Q		

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
IGT (FY09)					4Q		
DGT (FY10)						1Q	
IGT (FY10)						4Q	
DGT (FY11)							1Q
IGT (FY11)							4Q
Missile Field Construction							
Missile Field 3 (10 Silos)			1Q				
GBI 3rd Site Start			2Q				
Missile Field 1 (MEB)			4Q				
Missile Field I (10 Silos)			4Q				
Capability Enhancement GBIs							
LDC Missiles 10-14		1Q-2Q					
LDC Missiles 15-18		4Q	1Q				
LDC Missiles 19-22			4Q	1Q			
LDC Missiles 23-28				4Q	1Q		
SBX							
SBX Integration		3Q					

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603882C Ballistic Missile Defense Midcourse Defense Segment			
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development	0	72,559	354,948	1,394,803	1,186,732	500,963	340,922
RDT&E Articles Qty	0	0	0	39	16	0	0

A. Mission Description and Budget Item Justification

Block 2008 includes the next increment of fielded capability with additional interceptors (up to 10; Missiles 31-40). It also supports the continuing development, beginning in FY08, and testing of new and evolving BMDS technologies. This development effort consists of sustaining engineering and spiral upgrades to the GMD components of the Block 2004 and 2006 BMDS operational alert and Test Bed. These efforts will include Preplanned Product Improvements (P3I) to GMD components and integration of emerging MDA technologies, including enhanced EKV and SBX capabilities, additional GFC capabilities, countermeasures mitigation, and multi-sensor fusion. This development effort will mature key technologies in logical stages to allow for an enhanced BMDS operational capability and Test Bed (using operationally representative hardware and software vice developmental hardware and software), and a continuing program to develop and demonstrate a wide range of technologies supporting a ground-based Hit-to-Kill capability. This development effort also provides hardware, planning, mission support and execution of the GMD test program.

ESGs are embedded into the GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing; EKV and GMD fire control upgrades; and improved GBIs enable improvements to all ESGs and increase warfighter confidence.

Block 2008 incorporates additional BMDS ESGs:

- Engage & Launch on UEWR (Thule)

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<u>B. Accomplishments/Planned Program</u>			
	FY 2005	FY 2006	FY 2007
Block 2008 Capability Enhancement Interceptors (GBI)	0	69,559	325,948
RDT&E Articles (Quantity)	0	0	0
<p>The Ground-Based Interceptors consist of an Exoatmospheric Kill Vehicle(EKV) and a booster vehicle. These interceptors will enhance the BMDS capability against long and intermediate range ballistic missile attacks by adding additional interceptors.</p> <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> • Initiates acquisition of ten (10) common silos at Fort Greely. • Initiates acquisition of ten (10) sets of launch support equipment. • Initiates acquisition of up to five (5) GBIs. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Continues acquisition of ten (10) common silos at Fort Greely. • Continues acquisition of ten (10) sets of launch support equipment. • Continues acquisition of up to five (5) GBIs. • Initiates acquisition of up to five (5) GBIs. 			
	FY 2005	FY 2006	FY 2007
Block 2008 (RDT&E Construction)	0	3,000	29,000
RDT&E Articles (Quantity)	0	0	0
<p>This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibit, RDT&E Construction Data.</p> <p>FY06 Planned Program:</p> <ul style="list-style-type: none"> • Initiates construction of 10 additional silos at Fort Greely. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Continues construction of 10 additional silos at Fort Greely. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<p><u>D. Acquisition Strategy</u></p> <p>GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS NLT DEC 2004, while continuing RDT&E work and spiral upgrades such that some number of components of GMD will remain part of the BMDS Test Bed even after being fielded as part of the initial capability. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Block 2008 Capability Enhancement Interceptors (GBI)								
GBIs	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	0	50,000	1/2Q	220,948	1/2Q	270,948
Expansion	SS/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	0	19,559	1/2Q	105,000	1/2Q	124,559
Subtotal Product Development			0	69,559		325,948		395507
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Block 2008 (RDT&E Construction)								
	MIPR	USACOE/ AK	0	3,000	N/A	29,000	1/2Q	32,000
Subtotal Support Costs			0	3,000		29,000		32000
Remarks								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								
Remarks								
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services								
Remarks								
Project Total Cost			0	72,559		354,948		427,507
Remarks								
<p>The Prime Contract is not definitized for the restructured Ground-based Midcourse Defense capability-based acquisition strategy, therefore the funding breakouts shown above are estimates. When definitized, the Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.</p>								











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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																												
IFT13C	▲																											
IFT-14		▲																										
FT-1					▲																							
FT-2						▲																						
FT-3							▲																					
FT-4								▲																				
FT-5									▲																			
FT-6										▲																		
FT-7a/b (Salvo)											▲																	
FT-8												▲																
FTG 08-4													▲															
FTG 08-5a/b (Salvo)														▲														
FTG 08-6															▲													
FTG 10-1																▲												
FTG 10-2a/b (Salvo)																	▲											
Legend																												
▲ Significant Event (complete)														▲ Significant Event (planned)														
★ Milestone Decision (complete)														★ Milestone Decision (planned)														
◆ Element Test (complete)														◆ Element Test (planned)														
▼ System Level Test (complete)														▼ System Level Test (planned)														
▲—▲ Complete Activity														▲—▲ Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																												
FTG 10-3																										Δ		
FTG 10-5a/b (Salvo)																											Δ	
FTG 10-6																												Δ
Radar Certification Test																												
FT 04-1						Δ																						
Integrated/Distributed Ground Tests																												
GT 04-1a (Run For Record)					▲																							
GT 04-2					▲	—	▲	Δ																				
GT 04-1b (Run For Record)						▲																						
IGT 7								▲																				
GT 04-4									▲																			
GT 04-3												▲																
DGT (FY08)														▲														
IGT (FY08)																▲												
DGT (FY09)																	▲											
Legend																												
▲ Significant Event (complete)														▲ Significant Event (planned)														
★ Milestone Decision (complete)														☆ Milestone Decision (planned)														
◆ Element Test (complete)														◇ Element Test (planned)														
▼ System Level Test (complete)														▽ System Level Test (planned)														
▲—▲ Complete Activity														▲—▲ Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011																						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																			
Integrated/Distributed Ground Tests																																															
IGT (FY09)																																															
DGT (FY10)																																															
IGT (FY10)																																															
DGT (FY11)																																															
IGT (FY11)																																															
Missile Field Construction																																															
Missile Field 3 (10 Silos)																																															
GBI 3rd Site Start																																															
Missile Field 1 (MEB)																																															
Missile Field I (10 Silos)																																															
Capability Enhancement GBIs																																															
LDC Missiles 10-14																																															
LDC Missiles 15-18																																															
LDC Missiles 19-22																																															
LDC Missiles 23-28																																															
Legend																																															
														Significant Event (complete)																								Significant Event (planned)									
														Milestone Decision (complete)																								Milestone Decision (planned)									
														Element Test (complete)																								Element Test (planned)									
														System Level Test (complete)																								System Level Test (planned)									
														Complete Activity																								Planned Activity									

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Flight Tests							
IFT13C	1Q						
IFT-14	2Q						
FT-1		1Q					
FT-2		3Q					
FT-3		4Q					
FT-4			1Q				
FT-5			2Q				
FT-6			3Q				
FT-7a/b (Salvo)				1Q			
FT-8				3Q			
FTG 08-4					1Q		
FTG 08-5a/b (Salvo)					3Q		
FTG 08-6					4Q		
FTG 10-1						1Q	
FTG 10-2a/b (Salvo)						2Q	
FTG 10-3							1Q
FTG 10-5a/b (Salvo)							3Q
FTG 10-6							4Q
Radar Certification Test							
FT 04-1		2Q					
Integrated/Distributed Ground Tests							
GT 04-1a (Run For Record)		1Q					
GT 04-2		1Q-3Q					
GT 04-1b (Run For Record)		2Q					
IGT 7		4Q					
GT 04-4			1Q				
GT 04-3			4Q				
DGT (FY08)				1Q			
IGT (FY08)				4Q			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DGT (FY09)					1Q		
IGT (FY09)					4Q		
DGT (FY10)						1Q	
IGT (FY10)						4Q	
DGT (FY11)							1Q
IGT (FY11)							4Q
Missile Field Construction							
Missile Field 3 (10 Silos)			1Q				
GBI 3rd Site Start			2Q				
Missile Field 1 (MEB)			4Q				
Missile Field I (10 Silos)			4Q				
Capability Enhancement GBIs							
LDC Missiles 10-14		1Q-2Q					
LDC Missiles 15-18		4Q	1Q				
LDC Missiles 19-22			4Q	1Q			
LDC Missiles 23-28				4Q	1Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603882C Ballistic Missile Defense Midcourse Defense Segment			
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0008 Ground-Based Midcourse Defense (GMD) Block 2010	0	0	118,900	706,000	669,800	1,575,388	1,310,381
RDT&E Articles Qty	0	0	0	0	5	34	11

A. Mission Description and Budget Item Justification

Block 2010 further supports the continuing development and testing of new and evolving BMDS technologies. In addition, GMD will begin to expand the BMDS capability by beginning the planning for a third missile site. Block 2010 also includes the next increment of fielded capability with additional interceptors (up to 10), for either the Third Site or aging inventory at Fort Greely, AK. Planned additional enhancements include:

- Third Missile Site with 10 additional silos with Silo Interface Vault (SIVs) capable of supporting interceptors, Launch Support Equipment (LSE) racks that will interface with the existing Command Launch Equipment (CLE) assets and capabilities comparable to other operational silos
- Ten additional GBIs
- Missile Assembly Building (MAB), GFC/C and Readiness and Control Building, Missile Equipment Building (MEB), 2 Missile Storage Igloos, IDT Building, Military Satellite Communications (MILSATCOM) facility and other facilities at the Third Missile Site capable of providing appropriate protection of equipment
- Two Small Mid-Course Discrimination X-Band Radars, adjunct to the FBX-Ts, with communications connectivity through C2BMC to the GCN and ET. This X-Band Radar is integrated with, but not part of the GMD Element

ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing; EKV and GMD fire control upgrades; and improved GBIs enable improvements to all ESGs and increase warfighter confidence.

Block 2010/2012 BMDS ESGs:

- SM-3 Launch on Cobra Dane/UEWR/SBX
- Engage on Spy-1 (Mod 1)
- Launch on SBX (Mod 2)

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)						R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment		
<u>B. Accomplishments/Planned Program</u>								
	FY 2005	FY 2006	FY 2007					
Block 2010 (Third Site)	0	0	118,900					
RDT&E Articles (Quantity)	0	0	0					
<p>FY07 Planned Program:</p> <ul style="list-style-type: none"> Initiates acquisition of up to ten (10) GBIs Initiates geo-technical site survey location studies for a third interceptor launch site Initiates planning for third site launch complex Conducts environmental, safety and health management analyses/documentation and compliance RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data 								
<u>C. Other Program Funding Summary</u>								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

D. Acquisition Strategy

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks and spiral upgrades. The Department has structured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy has been to build and field an initial capability of the BMDS by Dec 2004, while continuing RDT&E work and spiral upgrades such that some number of GMD components will remain part of the BMDS Test Bed, even after being fielded as part of the initial capability. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Block 2010 (Third Site)								
Third Site	C/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	0	0	N/A	46,765	1/2Q	46,765
GBI's	C/CPAF	Boeing/ AL/AK/AZ/CA/CO /TX/VA	0	0	N/A	63,135	1/2Q	63,135
RDT&E Construction	MIPR	COE/ Europe Site	0	0	N/A	9,000	1/2Q	9,000
Subtotal Product Development			0	0		118,900		118900
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Support Costs								
Remarks								
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								
Remarks								











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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services								
Remarks								
Project Total Cost			0	0		118,900		118,900
Remarks								











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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006																						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011														
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4											
Flight Tests																																							
IFT13C	▲																																						
IFT-14		▲																																					
FT-1					▲																																		
FT-2						▲																																	
FT-3							▲																																
FT-4								▲																															
FT-5									▲																														
FT-6										▲																													
FT-7a/b (Salvo)											▲																												
FT-8												▲																											
FTG 08-4													▲																										
FTG 08-5a/b (Salvo)														▲																									
FTG 08-6															▲																								
FTG 10-1																▲																							
FTG 10-2a/b (Salvo)																	▲																						
										Legend																													
										▲	Significant Event (complete)																	▲	Significant Event (planned)										
										★	Milestone Decision (complete)																	★	Milestone Decision (planned)										
										◆	Element Test (complete)																	◆	Element Test (planned)										
										▼	System Level Test (complete)																	▼	System Level Test (planned)										
										▲▼	Complete Activity																	▲▼	Planned Activity										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																												
FTG 10-3																												
FTG 10-5a/b (Salvo)																												
FTG 10-6																												
Radar Certification Test																												
FT 04-1																												
Integrated/Distributed Ground Tests																												
GT 04-1a (Run For Record)																												
GT 04-2																												
GT 04-1b (Run For Record)																												
IGT 7																												
GT 04-4																												
GT 04-3																												
DGT (FY08)																												
IGT (FY08)																												
DGT (FY09)																												
Legend																												
 Significant Event (complete)														 Significant Event (planned)														
 Milestone Decision (complete)														 Milestone Decision (planned)														
 Element Test (complete)														 Element Test (planned)														
 System Level Test (complete)														 System Level Test (planned)														
 Complete Activity														 Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Integrated/Distributed Ground Tests																												
IGT (FY09)																												
DGT (FY10)																												
IGT (FY10)																												
DGT (FY11)																												
IGT (FY11)																												
Missile Field Construction																												
Missile Field 3 (10 Silos Complete)																												
GBI 3rd Site Start																												
Missile Field 1 (10 Silos Complete)																												
Missile Field 1 (MEB)																												
Capability Enhancement GBIs																												
LDC Missiles 10-14																												
LDC Missiles 15-18																												
LDC Missiles 19-22																												
LDC Missiles 23-28																												
	Legend																											
	 Significant Event (complete)													 Significant Event (planned)														
	 Milestone Decision (complete)													 Milestone Decision (planned)														
	 Element Test (complete)													 Element Test (planned)														
	 System Level Test (complete)													 System Level Test (planned)														
	 Complete Activity													 Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Flight Tests							
IFT13C	1Q						
IFT-14	2Q						
FT-1		1Q					
FT-2		3Q					
FT-3		4Q					
FT-4			1Q				
FT-5			2Q				
FT-6			3Q				
FT-7a/b (Salvo)				1Q			
FT-8				3Q			
FTG 08-4					1Q		
FTG 08-5a/b (Salvo)					3Q		
FTG 08-6					4Q		
FTG 10-1						1Q	
FTG 10-2a/b (Salvo)						2Q	
FTG 10-3							1Q
FTG 10-5a/b (Salvo)							3Q
FTG 10-6							4Q
Radar Certification Test							
FT 04-1		2Q					
Integrated/Distributed Ground Tests							
GT 04-1a (Run For Record)		1Q					
GT 04-2		1Q-3Q					
GT 04-1b (Run For Record)		2Q					
IGT 7		4Q					
GT 04-4			1Q				
GT 04-3			4Q				
DGT (FY08)				1Q			
IGT (FY08)				4Q			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DGT (FY09)					1Q		
IGT (FY09)					4Q		
DGT (FY10)						1Q	
IGT (FY10)						4Q	
DGT (FY11)							1Q
IGT (FY11)							4Q
Missile Field Construction							
Missile Field 3 (10 Silos Complete)			1Q				
GBI 3rd Site Start			2Q				
Missile Field 1 (10 Silos Complete)			4Q				
Missile Field 1 (MEB)			4Q				
Capability Enhancement GBIs							
LDC Missiles 10-14		1Q-2Q					
LDC Missiles 15-18		4Q	1Q				
LDC Missiles 19-22			4Q	1Q			
LDC Missiles 23-28				4Q	1Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0709 AEGIS Ballistic Missile Defense Block 2004	901,299	0	0	0	0	0	0
RDT&E Articles Qty	24	0	0	0	0	0	0
<i>Note: Per Congressional direction, funding for all Aegis BMD projects has been transferred to PE 0603892C, Ballistic Missile Defense Aegis, as of FY06.</i>							
<i>RDT&E Articles for FY05: Eight (8) SM-3 missiles, two (2) targets, four (4) ARAVs, BMD 3.0E installed on seven (7) DDGs, delivery of the BMD 3.0 computer program, and installation of BMD 3.0 on two (2) CGs</i>							
<u>A. Mission Description and Budget Item Justification</u>							
Aegis BMD Block 2004 supports the BMDS mission of intercepting ballistic missiles of all ranges in all regions and in all phases as follows:							
<ul style="list-style-type: none">• In all regions: Provide sea-based surveillance, tracking, and engagement capabilities in international waters.• In all phases of ballistic missile flight: Long Range Surveillance and Track (LRS&T) capability against missile threats in all flight stages; engagement capability against missile threats in the midcourse flight stage• Against all ranges:<ul style="list-style-type: none">○ Against long-range ballistic missiles by providing surveillance and tracking support as part of the Block 2004 Limited Defensive Capability (LDC).○ Against short and medium range ballistic missiles by providing engagement support as part of Block 2004.							
Aegis BMD supports LDC by providing LRS&T data to other elements of the BMDS. Aegis BMD will further improve both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon autonomous data and upon data received via the Tactical Digital Information Link (TADIL) network.							
The Aegis BMD Block 2004 program will:							
<ul style="list-style-type: none">• Defeat unitary and simple separating threats (Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (MRBMs)) with Aegis BMD configured cruisers and destroyers using SM-3 Blk I or IA guided missiles.• Provide Long Range Ballistic Missile (LRBM) surveillance and track data through the BMDS to the GMD element to cue and initiate fire control Weapons Task Plans.• Provide Aegis BMD surveillance and track data to the BMDS to support Combatant Commander situational awareness.• Expand the engagement battle space by using remote (Aegis AN/SPY-1) sensor data delivered via the TADIL-J network.							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006													
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment													
<ul style="list-style-type: none"> Supply Aegis BMD operational data to the BMDS C2BMC Element to support Combatant Commander situational awareness. Provide an operational, engagement-capable system. <p>Aegis BMD Block 2004 develops three incremental capabilities:</p> <ul style="list-style-type: none"> LRS&T (BMD 3.0E computer program) support as part of LDC; A preliminary engagement capability (BMD 3.0 with SM-3 Blk I) for test bed operations and for emergency use, if required; and An operationally certified BMD capability that combines the engagement capability with the LRS&T capability (BMD 3.6 with SM-3 Blk I and IA). The final Block 2004 is fully compliant with the Element Capability Specification. <p>In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without requiring external cueing.</p> <p>Aegis BMD Block 2004 will support SM-3 Engage on AN/SPY-1, SM-3 Launch on Remote (AN/SPY-1), GBI Engage on AN/SPY-1, and GBI Launch on AN/SPY-1.</p> <p><u>B. Accomplishments/Planned Program</u></p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%;">FY 2005</th> <th style="width: 15%;">FY 2006</th> <th style="width: 15%;">FY 2007</th> </tr> </thead> <tbody> <tr> <td>Weapon System Engineering</td> <td style="text-align: right;">189,477</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> <tr> <td>RDT&E Articles (Quantity)</td> <td style="text-align: right;">10</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> </tbody> </table> <p>In Block 2004, the Aegis BMD Weapon System Engineering group developed BMD 3.0E to provide LRS&T capability to the BMDS; BMD 3.0 to support testbed and emergency engagement operations; and BMD 3.6 to provide an operationally-certified system. Aegis BMD met the President's LDC objectives by deploying BMD 3.0E in Block 2004.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Articles: BMD 3.0 Computer Program (1), BMD 3.0 Cruisers (2), 3.0E LRS&T Destroyers (7)</p> <p>Aegis BMD Weapon System:</p> <ul style="list-style-type: none"> For Limited Defensive Capability (LDC)(LRS&T Capability): <ul style="list-style-type: none"> Installed BMD 3.0E LRS&T capability on seven (7) Aegis destroyers. Monitored the operational performance of the BMD 3.0E computer program. 					FY 2005	FY 2006	FY 2007	Weapon System Engineering	189,477	0	0	RDT&E Articles (Quantity)	10	0	0
	FY 2005	FY 2006	FY 2007												
Weapon System Engineering	189,477	0	0												
RDT&E Articles (Quantity)	10	0	0												

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment
<ul style="list-style-type: none"> ▪ Identified, prioritized, and developed plans to incorporate changes in final Block 2004 delivery. ○ Participated in Aegis BMD and other BMDS test events to collect and analyze ballistic missile tracking data. • For engagement capability: <ul style="list-style-type: none"> ○ Completed and delivered the initial testbed engagement capability, BMD 3.0, and authorized the configuration for emergency activation as necessary. ▪ Completed testing BMD 3.0 at the Combat Systems Engineering Development Site (CSEDS). ▪ Conducted BMD 3.0 Engineering Assessment to formally characterize the performance of BMD 3.0 as the basis for government acceptance. ▪ Obtained concurrence for fielding and deployment of BMD 3.0 at the System Software Safety Technical Review Panel and Weapon System Explosive Safety Review Board reviews. ▪ Completed authorization of BMD 3.0 weapon system. ▪ Completed BMD 3.0 installations on two (2) cruisers for flight testing and potential emergency deployment. ○ Conducted waterfront integration testing. ○ Characterized operational performance of BMD 3.0 with a successful flight mission and in an At-Sea Demonstration. ○ Collected data on separating targets, developed algorithm modifications, continued computer program development, and initiated testing of the BMD 3.6 Weapon System. ○ Began multi-element integration and testing of BMD 3.6. ○ Began CSEDS testing of BMD 3.6. ○ Completed BMD 3.6 ship installation design effort. ○ Completed modifications to engagement models and simulations to support analysis for a low exo-atmospheric intercept firing test. <p>Vertical Launching System (VLS):</p> <ul style="list-style-type: none"> • For engagement capability: <ul style="list-style-type: none"> ○ Conducted Mk 41 VLS Phase I system ground tests ○ Installed the Mk 41 VLS Phase I modifications to support flight missions. ○ Provided Mk 21 Mod 2 VLS canisters for SM-3 Blk I missiles. ○ Conducted Mk 41 VLS Phase II Critical Design Review (BMD 3.6). ○ Completed development of a multi-mission Mk 41 VLS capability as part of BMD 3.6. ○ Conducted ground tests of Aegis BMD multi-mission Mk 41 VLS capability. ○ Continued circuit card assembly re-design to resolve parts obsolescence. 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> ○ Completed Mk 41 VLS Ordnance Alteration Kits (firmware and logistical support upgrades). ○ Began purchases of Mk 21 Mod 2 VLS canisters for SM-3 Blk IA missiles. ○ Completed VLS/NAVSSI Interface design effort 			
	FY 2005	FY 2006	FY 2007
SM-3 Missile	506,558	0	0
RDT&E Articles (Quantity)	8	0	0
<p>Aegis BMD Block 2004 provides the SM-3 Blk I missile that can be used for emergency activation; completed the design efforts of the SM-3 Blk IA and completes component and section level testing of the SM-3 Blk IA. Completes initial non-recurring engineering preparation for rate manufacturing of SM-3 components at various manufacturing facilities.</p> <p>FY05 Accomplishments: RDT&E Articles: SM-3 Blk I Missiles (8)</p> <ul style="list-style-type: none"> • For engagement capability: <ul style="list-style-type: none"> ○ Participated in Flight Test Mission (FTM) 04-1 with one (1) SM-3 Blk I missile. <ul style="list-style-type: none"> ▪ Completed pre-flight analysis to verify scenarios and performance assessment. ▪ Prepared and completed missile delivery package for the Mission Control Panel reviews. ▪ Performed post-flight analysis to validate high fidelity simulations. ▪ Conducted post-flight analysis to support Mission Data Reviews (MDRs). ▪ Performed analysis of SM-3 Blk I Hardware/Software (HW/SW) based on flight results. ○ Validated interface compliance for missile pre-launch and in-flight support by completing weapon systems integration testing at CSEDS. ○ Delivered the five (5) SM-3 Blk I Initial Deployment Rounds. ○ Completed assembly and delivered three (3) additional SM-3 Blk I missiles. ○ Initiated manufacture and assembly of three (3) SM-3 Blk I missiles that will be delivered in FY06. ○ Continued SM-3 Blk IA HW/SW integration testing to validate requirements for electrical and mechanical interfaces. ○ Initiated SM-3 Blk IA Hazard Assessment and Safety compliance tests. ○ Continued SM-3 Value Engineering Change Proposal (VECP) implementation efforts to ensure service life requirement compliance. ○ Completed SM-3 Blk IA sustain DACS design verification tests. ○ Conducted Third Stage Rocket Motor obsolete material replacement design verification tests. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> ○ Continued SDACS pulse capability engineering tests. ○ Gained approval to proceed with the SM-3 Blk IA hardware/software development by completing the Critical Design Review (CDR). ○ Continued to monitor All-Up-Round obsolete material replacement effort. ○ Initiated non-recurring engineering preparation for rate manufacturing of SM-3 components in Tucson, AZ; Elkton, MD; Canoga Park, CA; Tempe, AZ, and Camden, AR. ○ Began fabrication of sections for first 12 SM-3 Blk IA missiles. 			
	FY 2005	FY 2006	FY 2007
System Test & Evaluation	118,305	0	0
RDT&E Articles (Quantity)	6	0	0
<p>This effort provides funding for Aegis BMD test and evaluation Block 2004 flight testing missions, as well as other BMDS system-wide tests to support the development of the BMDS.</p> <p>FY05 Accomplishments:</p> <p>RDT&E Articles: Targets (2); Aegis Readiness Assessment Vehicles (ARAVs) (4)</p> <ul style="list-style-type: none"> • Acquired 1 Group A (SRBM) target for FTM 04-1(FM-7), 1 Group B (MRBM) target for FTM 04-2 (FM-8), and 4 ARAVs for the At-Sea Demonstration (ASD) 3.0 test event and Ballistic Missile Tracking Exercise. • Began procurement of 1 Group B (MRBM) target for FTM-10 (delivery in FY06) • Conducted STELLAR DRAGON campaign consisting of FTM 04-1 (FM-7), and At-Sea Demonstration 3.0: <ul style="list-style-type: none"> ○ Participated in an ARAV Group A simulated engagement to verify BMD 3.0 ability to track. ○ Conducted FTM 04-1 (FM-7) flight test to verify BMD 3.0 emergency engagement capability with an intercept of a Group A target using an SM-3 Blk I missile. ○ Conducted ASD 3.0 in a multi-warfare environment to verify BMD 3.0 capability with simulated intercepts of two ARAV Group A targets and a simulated engagement of an ARAV Group B. • Participated in GMD IFT 13-C flight mission, using an Aegis Destroyer to provide target-tracking data to other BMDS elements. • Conducted planning for IFT-14 flight mission, using an Aegis destroyer to provide target-tracking data to other BMDS elements and the SM-3 Kinetic Warhead IR Seeker Captive Carry Test Bed in support of BMDS integration. • Participated in Glory Trip 189 LRS&T test event, which verified AWS capability to search, detect, and track a long-range multi-stage target; and transmit data using satellite Link-16 to BMDS. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> • Participated in Safety Enhanced Reentry Vehicle 2 (SERV-2), which was the first live tracking event for BMD 3.0E. Successfully participated in a multi-objective Ballistic Missile Defense System (BMDS) test, and reported successful equipment performance and data collection/architecture execution following launch of the Minuteman III ICBM from Vandenberg Air Force Base to the Reagan Test Site (RTS). • Participated in Critical Measurements/Counter Measures 1 (CMCM-1) and collected extensive Aegis BMD Signal Processor (BSP) and Doppler Data Collection System (DDCS) data on the flight vehicle consistent with pre-mission predictions. The Destroyer's tracks were also successfully transmitted via satellite TADIL-J to a JADE configuration at PMRF. • Conducted the first simulated engagement of a live ballistic missile by a DDG. The DDG detected, tracked and engaged a Group B (MRBM) target that was air-launched from a C-17 during the Medium Range Target (MRT) Risk Reduction Flight. • Completed modifications to engagement models and simulations to support analysis for a low exo-atmospheric intercept. • Began test planning for FTM-10 and FTM-11 • Participated in Critical Measurements and Countermeasures (CMCM-1) flight tests with the BSP Advanced Development Model (ADM). • Conducted STELLAR VALKYRIE campaign consisting of Ballistic Missile Tracking Exercise and FTM 04-2 (FM-8) (completed November 2005): <ul style="list-style-type: none"> ○ Participated in an ARAV Group B simulated engagement to verify BMD 3.0 ability to track. ○ Conducted FTM 04-2 (FM-8) flight test to verify BMD 3.0 emergency engagement capability with an intercept of a Group B (MRBM) target using an SM-3 Blk I missile. 			
	FY 2005	FY 2006	FY 2007
Block 2004 Targets	33,296	0	0
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides ballistic missile target hardware, target range support, logistics support, target integration, and associated launch services to support Aegis BMD Block 2004 flight tests, as well as other system-wide tests that support the development and integration of Aegis BMD into the BMDS.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Successfully conducted Tactical Target Vehicle (TTV) flight intercept presentation in support of FTM 04-1 at the Pacific Missile Range Facility (PMRF), Kauai, Hawaii. • Successfully conducted Medium Range Target (MRT) demonstration flight to prove air-launch capability for new target system design. • Completed design, manufacture, and delivery of one (1) Modified Ballistic Re-entry Vehicles (MBRV) and one (1) Bulk Chemical Front Section (BCFSs) payload insert in support of FTM 04-2. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none"> Successfully conducted MRT pre-flight analysis, presentation, launch, and post-flight analysis in support of FTM 04-2. 			
	FY 2005	FY 2006	FY 2007
Aegis BMD Block 2004 Fire Control (BMC3)	12,244	0	0
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides for Fire Control (BMC3) improvements, including establishment of alternate BMD data paths and enhancements, supporting increased interoperability with other BMDS elements.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Updated and improved BMDS C2BMC interface control specifications requirements with other elements of the BMDS. Completed trade study of a tactical missile-to-ship telemetry receiving system to support real time Kill Assessment. Initiated integration of CDLMS v. 3.4 into BMD 3.6 to accomplish multiple satellite data paths (UHF, SHF, and EHF) for improved BMDS interoperability. 			
	FY 2005	FY 2006	FY 2007
System Engineering & Integration	17,664	0	0
RDT&E Articles (Quantity)	0	0	0
<p>This effort provided funding to work in collaboration with the BMDS System Engineer to develop requirements flowdown for Aegis BMD Block 2004, and participate in the definition of appropriate Engagement Sequence Groups to best utilize Aegis BMD capability as part of the overall BMDS.</p> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> Performed analysis to support BMDS Block 2004 capability assessments required to support BMDS-level capability reviews 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005			FY 2006		FY 2007		
Operations & Support	23,755			0		0		
RDT&E Articles (Quantity)	0			0		0		
This effort provides funding for operator training, and support and maintenance of Aegis BMD fielded assets.								
FY05 Accomplishments:								
<ul style="list-style-type: none">Continued crew training in support of installations.Achieved Integrated Logistics Support (ILS) certification for BMD 3.0.Conducted crew training for operation and maintenance of BMD 3.0.Achieved Integrated Logistics Support (ILS) certification for BMD 3.6.								
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

D. Acquisition Strategy

The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities. After considering all the technical and management aspects of the program and to meet the requirements presented by the ballistic missile threat, the Aegis BMD program has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and Aegis Weapon System, respectively.

D. Acquisition Strategy

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapon System Engineering								
AWS	SS/CPIF	Lockheed Martin/ NJ	324,685	0	N/A	0	N/A	324,685
AWS	FFRDC	MIT/LL/ MA	5,325	0	N/A	0	N/A	5,325
AWS	SS/CPFF	JHU/APL/ MD	7,600	0	N/A	0	N/A	7,600
AWS	MIPR	NSWC/DD/ VA	28,836	0	N/A	0	N/A	28,836
AWS	MIPR	MITRE/ VA	1,400	0	N/A	0	N/A	1,400
AWS	MIPR	NSWC/PHD/ CA	13,824	0	N/A	0	N/A	13,824
AWS		MDA	13,586	0	N/A	0	N/A	13,586
AWS	Various	VARIOUS	19,016	0	N/A	0	N/A	19,016
MISSILE	SS/CPIF	RAYTHEON/ AZ	704,637	0	N/A	0	N/A	704,637
MISSILE	SS/CPIF	JHU/APL/ MD	21,693	0	N/A	0	N/A	21,693
MISSILE	FFRDC	MIT/LL/ MA	1,650	0	N/A	0	N/A	1,650
MISSILE	MIPR	NSWC/DD/ VA	16,667	0	N/A	0	N/A	16,667
MISSILE	MIPR	NSWC/PHD/ CA	9,665	0	N/A	0	N/A	9,665
MISSILE	MIPR	WSMR/ NM	1,642	0	N/A	0	N/A	1,642

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
MISSILE	MIPR	NSWC/CD/ CA	4,168	0	N/A	0	N/A	4,168
MISSILE	MIPR	NSWC/IH/ MD	3,013	0	N/A	0	N/A	3,013
MISSILE	MIPR	NAWC/CL/ CA	1,755	0	N/A	0	N/A	1,755
MISSILE		MDA/ VA	24,676	0	N/A	0	N/A	24,676
MISSILE	Various	VARIOUS/ VARIOUS	6,280	0	N/A	0	N/A	6,280
Subtotal Product Development			1,210,118	0		0		1,210,118
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapon System Engineering								
	SS/CPFF	JHU/APL/ MD	7,902	0	N/A	0	N/A	7,902
	SS/CPAF	Lockheed Martin/ NJ	10,500	0	N/A	0	N/A	10,500
	MIPR	NSWC/DD/ VA	11,324	0	N/A	0	N/A	11,324
	MIPR	NSWC/PHD/ CA	6,807	0	N/A	0	N/A	6,807

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	SPAWAR/ CA	4,734	0	N/A	0	N/A	4,734
		MDA	2,489	0	N/A	0	N/A	2,489
	MIPR	NAVSEA/ DC	3,700	0	N/A	0	N/A	3,700
	MIPR	SupShip Pascagoula/ MS	4,635	0	N/A	0	N/A	4,635
	MIPR	SupShip Bath/ ME	1,965	0	N/A	0	N/A	1,965
	MIPR	VARIOUS/SSES Philadelphia/ VARIOUS	220	0	N/A	0	N/A	220
Subtotal Support Costs			54,276	0		0		54276
Remarks								
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
System Test & Evaluation								
	MIPR	PMRF/ HI	12,002	0	N/A	0	N/A	12,002
	C/CPFF	HTS/ CA	3,290	0	N/A	0	N/A	3,290
	SS/CPAF	Xontech/ CA	2,122	0	N/A	0	N/A	2,122

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	MIPR	NSWC/PHD/ CA	11,556	0	N/A	0	N/A	11,556
	MIPR	NAWC/PM/ CA	8,147	0	N/A	0	N/A	8,147
	MIPR	NSWC/Corona/ CA	4,584	0	N/A	0	N/A	4,584
	MIPR	NSWC/DD/ VA	20,306	0	N/A	0	N/A	20,306
	MIPR	CINPACFLT/ HI	2,650	0	N/A	0	N/A	2,650
	SS/CPFF	JHU/APL/ MD	20,082	0	N/A	0	N/A	20,082
	MIPR	SMDC/ AL	4,670	0	N/A	0	N/A	4,670
	MIPR	SPAWAR/ CA	7,117	0	N/A	0	N/A	7,117
	MIPR	DOI/ DC	1,210	0	N/A	0	N/A	1,210
	MIPR	MDAO	49,300	0	N/A	0	N/A	49,300
	Various	VARIOUS/ VARIOUS	8,613	0	N/A	0	N/A	8,613
	MIPR	WSMR/ CA	11,035	0	N/A	0	N/A	11,035
		MDA	6,397	0	N/A	0	N/A	6,397
Subtotal Test and Evaluation			173,081	0		0		173081
Remarks								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapon System Engineering								
		NAVSEA/ DC	26,435	0	N/A	0	N/A	26,435
	SS/CPFF	JHU/API/ MD	2,834	0	N/A	0	N/A	2,834
	MIPR	NSWC/DD/ VA	2,398	0	N/A	0	N/A	2,398
	C/CPFF	Anteon/ VA	46,749	0	N/A	0	N/A	46,749
	SS/CPFF	Paradigm/ VA	4,175	0	N/A	0	N/A	4,175
	SS/CPAF	Lockheed Martin/ NJ	1,700	0	N/A	0	N/A	1,700
	SS/CPAF	Raytheon/ AZ	2,000	0	N/A	0	N/A	2,000
		MDA	14,922	0	N/A	0	N/A	14,922
	Various	Various/ Various	8,517	0	N/A	0	N/A	8,517
		MDA (Salaries)	1,763	0	N/A	0	N/A	1,763
Subtotal Management Services			111,493	0		0		111,493
Remarks								
Project Total Cost			1,548,968	0		0		1,548,968
Remarks								

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																		Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)														R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Testing Milestones																													
At-Sea Demo 3.0 (Concurrent with FM-7)		▲																											
Manufacturing Processes and Advanced Materials																													
BMD 3.0 Computer Program	▲																												
Aegis BMD FTM 04-1 configuration		▲																											
Development Milestones																													
VLS 3.1 Critical Design Review	▲																												
BMD 3.0 M&S Performance Assessment		▲																											
BMD 3.0 Engineering Assessment	▲																												
SM-3 Block IA Critical Design Review	▲																												
Flight Tests																													
FTM 04-1 (FM-7)		▲																											
Integrated Flight Test																													
IFT 13C	▲																												
IFT 14	▲	▲	▲																										
Fielding Deliveries/Missiles																													
Block I Missiles			▲	▲																									
Accelerated Block I Missiles	▲																												
	Legend																												
▲	Significant Event (complete)													▲	Significant Event (planned)														
★	Milestone Decision (complete)													★	Milestone Decision (planned)														
◆	Element Test (complete)													◆	Element Test (planned)														
▼	System Level Test (complete)													▼	System Level Test (planned)														
▲	Complete Activity													▲	Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Testing Milestones							
At-Sea Demo 3.0 (Concurrent with FM-7)	2Q						
Third Stage Rocket Motor DVT-3	3Q						
Manufacturing Processes and Advanced Materials							
BMD 3.0 Computer Program	1Q						
Aegis BMD FTM 04-1 configuration	2Q						
Development Milestones							
VLS 3.1 Critical Design Review	1Q						
BMD 3.0 M&S Performance Assessment	2Q						
BMD 3.0 Engineering Assessment	1Q						
SM-3 Block IA Critical Design Review	1Q						
Flight Tests							
FTM 04-1 (FM-7)	2Q						
Integrated Flight Test							
IFT 13C	1Q						
IFT 14	1Q-2Q						
Fielding Deliveries/Missiles							
Block I Missiles	3Q-4Q						
Accelerated Block I Missiles	1Q						
FY05 events shown only; the full Block 2004 schedule is shown in PE 0603892C, BMD Aegis.							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0809 AEGIS Ballistic Missile Defense Block 2006	121,574	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Per Congressional direction, funding for all Aegis BMD projects has been transferred to PE 0603892C, Ballistic Missile Defense Aegis, as of FY06.

A. Mission Description and Budget Item Justification

Aegis BMD Block 2006 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions: provide sea-based surveillance, tracking, and engagement capabilities.
- In all phases of ballistic missile flight: Long Range Surveillance and Track (LRS&T) capability against missile threats of all ranges; engagement capability against Short Range Ballistic Missile (SRBM) to Medium Range Ballistic Missile (MRBM)-class missile threats
 - Develop engagement capability against Intermediate range Ballistic Missile (IRBM)-class targets.
- Against all ranges:
 - Enhanced LRS&T capability against Ballistic Missile threats of all ranges through Aegis BMD Signal Processor (BSP) improvements.

Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD improved both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon data received via the Tactical Digital Information Link Joint (TADIL-J) network from other Aegis ships in Block 2004. Through development and testing of the Aegis BMD Signal Processor (BSP) in Block 2006, Aegis BMD will provide significant improvements in discrimination capability and performance against more diverse and longer range threats in Block 2008.

The Aegis BMD Block 2006 4.0E Weapon System will continue the evolutionary spiral development of Block 2004 by performing the initial integration of the BSP into the Aegis BMD Weapon System. BMD 4.0E will improve discrimination and tracking capability against more robust threats for BMDS engagements. BMD 4.0E LRS&T upgrades using BSP will go through an Engineering Assessment and be delivered to the testbed (CSEDS) in Block 2006.

BMD 4.0E will continue to evolve into the BMD 4.0 and 4.0.1 configurations; these are to be delivered during Block 2008.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006													
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment													
<p>Ongoing missile development in the Block 2006 timeframe is listed and described under Block 2008, project 0909. Block 2006 missile efforts will complete testing of the SM-3 Blk IA missile with the BMD 3.6 Weapon System.</p> <p>Aegis BMD Block 2006 will:</p> <ul style="list-style-type: none"> • Defeat unitary and more complex SRBM and MRBM threats with Aegis BMD configured cruisers, destroyers and Standard Missile-3 (SM-3) Blk I and IA guided missiles. • Develop a limited IRBM capability. • Complete development and engineering assessment of BMD 4.0E - testbed capability that provides improved ballistic missile threat tracking, discrimination, and object classification via the BSP Engineering Development Model (EDM). • Continue installations of the BMD 3.0E surveillance and tracking capability and the BMD 3.6 engagement capability on additional Aegis destroyers, and deliver 22 SM-3 Blk IA missiles. <p>In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without external cueing. Aegis BMD also supports an engagement against SRBMs and MRBMs using data from other BMDS elements and external sensors.</p> <p>Aegis BMD Block 2006 will support SM-3 Engage on/Launch on AN/SPY-1, SM-3 Launch on FBX-T, GBI Engage on AN/SPY-1 Mod. 1, and GBI Launch on AN/SPY-1 Mod 1.</p> <p><u>B. Accomplishments/Planned Program</u></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%;">FY 2005</th> <th style="width: 15%;">FY 2006</th> <th style="width: 30%;">FY 2007</th> </tr> </thead> <tbody> <tr> <td>Weapons System Engineering</td> <td style="text-align: right;">76,880</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> <tr> <td>RDT&E Articles (Quantity)</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> </tbody> </table> <p>FY05 Accomplishments:</p> <ul style="list-style-type: none"> • Began improvements to ballistic missile tracking, characterization, discrimination, feature extraction, object classification, and kill assessment as a part of Aegis BSP development, to include: <ul style="list-style-type: none"> ○ Real-time feature extraction capability and classification algorithm development ○ Initial at-sea testing of the Aegis BSP Advanced Development Model 					FY 2005	FY 2006	FY 2007	Weapons System Engineering	76,880	0	0	RDT&E Articles (Quantity)	0	0	0
	FY 2005	FY 2006	FY 2007												
Weapons System Engineering	76,880	0	0												
RDT&E Articles (Quantity)	0	0	0												

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment	
<ul style="list-style-type: none">Commenced development of BMD 4.0E/4.0/4.0.1:<ul style="list-style-type: none">Commenced top level requirements flow down for Block 2006 Aegis BMD Weapon System design .Commenced detailed design for Aegis BMD components: SPY radar system, command and control system, weapons control system, and mission planning system.Continued S-Band Advanced Radar (SBAR) algorithm research and analysis in the areas of digital signal processing, radio frequency processing, systems engineering, and radar control processing.Began Aegis BMD Multi-Asset Planning in support of Joint Defense Planner.Began definition, planning, and initial implementation of Aegis BMD Link certification requirements.			
	FY 2005	FY 2006	FY 2007
SM-3 Missile	41,200	0	0
RDT&E Articles (Quantity)	0	0	0
During Block 2006 the SM-3 Blk IA missiles will be tested, monitored for improvements, and delivered for deployment.			
FY05 Accomplishments:			
<ul style="list-style-type: none">Continued Pre-flight analysis support for Block 2006 related Flight Mission Planning Analysis.Conducted material engineering to monitor parts obsolescence.Compared data analysis and requirements to pace missile updates with evolving threat and weapons system improvements.Initiated Block 2006 Element Capability Specification (ECS) requirements analyses for flow down to missile top-level requirements.Initiated Block 2006 capability performance assessment studies for the SM-3 Blk IA.Reviewed manufacturing practices to lower unit cost of the SM-3 Blk IA via improved manufacturing processes.Awarded contract for twelve (12) SM-3 Blk IA missiles with delivery beginning in FY06.Initiated IR discrimination risk reduction and algorithm development.Conducted engineering level testing of All Reflective Optics (AROs).Fabricated generation two Advanced Signal Processor (ASP) to conduct computer-in-the-loop and hardware-in-the-loop testing for improved missile discrimination and mitigate diminished manufacturing source issues.Continued development of the two-color seeker, including a captive-carry test during FTM 04-1 (included prototype ARO telescope and initial production two-color Integrated Dewar Assembly (IDA)).Continued TDACS design efforts.			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005		FY 2006		FY 2007			
Aegis BMD Fire Control (BMC3)	3,494		0		0			
RDT&E Articles (Quantity)	0		0		0			
This effort provides for BMC3 improvements, including establishment of alternate BMD data paths and enhancements, supporting increased interoperability with other BMDS elements.								
FY05 Accomplishments:								
<ul style="list-style-type: none">Began Aegis BMD Multi-Asset Planning in support of Joint Defense Planner.Began definition, planning, and initial implementation of Aegis BMD Link certification requirements.								
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475
<p><u>D. Acquisition Strategy</u></p> <p>The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities. The best approach (competitive or selected source) will be determined after considering all the technical and management aspects of the program.</p>								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapons System Engineering								
AWS	SS/CPAF	Lockheed Martin/ NJ	75,720	0	N/A	0	N/A	75,720
AWS	FFRDC	MIT/LL/ MA	5,075	0	N/A	0	N/A	5,075
AWS	CPFF	JHU/APL/ MD	1,100	0	N/A	0	N/A	1,100
AWS	MIPR	NSWC/DD/ VA	2,650	0	N/A	0	N/A	2,650
AWS	MIPR	MITRE/ VA	765	0	N/A	0	N/A	765
AWS		MDA	2,000	0	N/A	0	N/A	2,000
AWS	Various	Various	2,948	0	N/A	0	N/A	2,948
Subtotal Product Development			90,258	0		0		90258
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapons System Engineering								
	SS/CPFF	JHU/APL/ MD	3,191	0	N/A	0	N/A	3,191
	SS/CPAF	Lockheed Martin/ NJ	1,000	0	N/A	0	N/A	1,000

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY					R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					0603882C Ballistic Missile Defense Midcourse Defense Segment			

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPAF	MIT/LL/ MA	2,570	0	N/A	0	4Q	2,570
	SS/FPI	NSWC/DD/ VA	2,862	0	N/A	0	N/A	2,862
	SS/MIPR	NSWC/Corona/ CA	225	0	N/A	0	N/A	225
	SS/MIPR	NSWC/PHD/ CA	936	0	N/A	0	N/A	936
	SS/CPAF	RAYTHEON/ AZ	39,960	0	N/A	0	N/A	39,960
	SS/CPFF	SEG/ VA	2,095	0	N/A	0	N/A	2,095
	SS/CPFF	TSC/ VA	365	0	N/A	0	N/A	365
	SS/CPFF	MITRE/ VA	350	0	N/A	0	N/A	350
Subtotal Support Costs			53,554	0		0		53554

Remarks

III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services			0	0		0		0
Remarks								
Project Total Cost			143,812	0		0		143,812
Remarks								

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																		Date February 2006											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)														R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment															
Fiscal Year		2005				2006				2007				2008				2009				2010				2011			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development Milestones																													
Block 2006 System Requirements Review			▲																										
		Legend																											
		▲ Significant Event (complete)										▲ Significant Event (planned)																	
		★ Milestone Decision (complete)										★ Milestone Decision (planned)																	
		◆ Element Test (complete)										◆ Element Test (planned)																	
		▼ System Level Test (complete)										▼ System Level Test (planned)																	
		▲▲ Complete Activity										▲▲ Planned Activity																	

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Development Milestones							
Block 2006 System Requirements Review	2Q						
FY05 events shown only; the full Block 2006 schedule is shown in PE 0603892C, BMD Aegis.							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)			R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0402 Japanese Cooperative Program	69,489	0	0	0	0	0	0
RDT&E Articles Qty	1	0	0	0	0	0	0

Note: Per Congressional direction, funding for all Aegis BMD projects, including Japanese Cooperative efforts, has been transferred to PE 0603892C, Ballistic Missile Defense Aegis, as of FY06.

RDT&E Article for FY05: One (1) SM-3 missile.

A. Mission Description and Budget Item Justification

The U.S./Japan Joint Cooperative Research (JCR) program will continue per the U.S. Department of Defense (DoD)/Japan Defense Agency (JDA) Memorandum of Agreement signed in 1999 to conduct cooperative research in Ballistic Missile Defense. The focus of research is on the development of advanced missile technologies in four components of the SM-3 guided missile: sensor, advanced kinetic warhead, second stage propulsion and lightweight nosecone. In FY06, the JCR project will flight test the lightweight nosecone in Joint Control Test Vehicle-1 (JCTV-1).

In addition, the U.S. and Japan have a mutual interest in the evolutionary development of improvements to the Standard Missile-3 (SM-3). The two countries recognize the benefits of cooperation and are in the process of finalizing a cooperative arrangement that will formalize the co-development of an upgraded, 21-inch diameter SM-3 missile (SM-3 Blk II/IIA). The objective of the SM-3 Cooperative Development (SCD) project is the development and initial at-sea flight test of the SM-3 Blk IIA missile. The SM-3 Blk II/IIA missile development will build upon established joint research investments by both the U.S. and Japan. The analysis approaches, system trade methodologies, and BMD system performance established in the U.S./Japan BMD Joint Analysis (JAWS) completed in March 2005 are the foundation for developing the SM-3 Blk IIA missile. Key technology improvements over the current SM-3 Blk IA missile planned for the SM-3 Blk IIA missile include a significant increase in velocity and range provided by a 21-inch diameter rocket motor propulsion stack, and increased seeker sensitivity and divert capability incorporated in an advanced kinetic warhead. Key component technologies to be developed under this Annex include, but are not limited to: Lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor.

Both work share and cost will be equitably shared by the U.S. and Japan.

The Scope of Work of the SCD project will be conducted through a three-phased engineering approach which completes by 2014. Phase I will consist of requirements definition for the SM-3 Blk II and IIA missile configurations, concurrent with initial risk reduction efforts related to the 21-inch propulsion components, lightweight nosecone, advanced seeker, larger Divert and Attitude Control System (DACS), and preliminary test plans.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment
<p>Also in Phase I, information exchange related to production and maintenance of the SM-3 Blk IIA missile will be initiated. Upon completion of requirements definition, a schedule for development and testing, and work share and cost share for development and testing will be refined. Phase II will define the performance allocation and component configuration for the development and testing of the SM-3 Blk II missile; Phase III will define the performance allocation and component configuration for the development and testing of the SM-3 Blk IIA missile.</p> <p>The SM-3 Blk II/IIA missile will increase the area that can be defended by Aegis BMD and increase the probability of kill against a larger threat set. It will leverage enhanced capability provided by BMDS sensor upgrades.</p> <p>The SCD project will:</p> <ul style="list-style-type: none"> • Develop components for the SM-3 Blk II/IIA missile and integrate them into an All Up Round (AUR) <ul style="list-style-type: none"> ○ 21” 2nd and 3rd stage components: <ul style="list-style-type: none"> ▪ 21” nosecone ▪ Advanced kinetic warhead ▪ Advanced Seeker ▪ Improved Large Diameter Divert and Attitude Control System • Modify the Aegis Weapon System to exploit the capability of the SM-3 Blk II/IIA missile and use of threat track data from BMDS sensors. • Integrate the SM-3 Blk IIA missile and VLS with Aegis ship systems <ul style="list-style-type: none"> ○ Includes development of a light weight VLS canister • Conduct test and evaluation using ground and flight tests <ul style="list-style-type: none"> ○ SM-3 Blk II/IIA missile ○ Aegis BMD ship systems ○ Aegis BMD weapon systems 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)						R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment		
<u>B. Accomplishments/Planned Program</u>								
	FY 2005		FY 2006		FY 2007			
Japan Cooperative Program	69,489		0		0			
RDT&E Articles (Quantity)	1		0		0			
<p>FY05 Accomplishments: RDT&E Articles: SM-3 Missile (1)</p> <ul style="list-style-type: none"> Conducted Critical Design Review for Ship System and VLS modifications to support JCTV-1 PoP flight test. Continued procurement of test articles and ship modifications for JCTV-1. Continued ground testing and test planning to support JCTV-1 Proof-of-Principle (PoP) flight test. Initiated hazard assessment and insensitive munitions testing of Japan defense Agency (JDA) rocket motors. Continued system engineering support for JDA design and development of second stage propulsion, QWIP seeker, lightweight nosecone and SDACS valve and thruster components. 								
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
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PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
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PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
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PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

D. Acquisition Strategy

The major near-term focus of activity for the Japan Cooperative Research Project will be preparation for and execution of the JCTV-1 flight test. The test will be integrated into the larger Aegis BMD test program. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts for U. S. Navy work and events.

The Japan Cooperative Development program will utilize a performance-based approach that ties program decision milestones to the performance of development prototypes, as well as Control Test Vehicle (CTV) and Guidance Test Vehicle (GTV) flight test article performance.

D. Acquisition Strategy

The major near-term focus of activity for the Japan Cooperative Research Project will be preparation for and execution of the JCTV-1 flight test. The test will be integrated into the larger Aegis BMD test program. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts for U. S. Navy work and events.

The Japan Cooperative Development program will utilize a performance-based approach that ties program decision milestones to the performance of development prototypes, as well as Control Test Vehicle (CTV) and Guidance Test Vehicle (GTV) flight test article performance.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Japan Cooperative Program								
JCR	SS/CPAF	Raytheon/ AZ	77,482	0	N/A	0	N/A	77,482
JCR	SS/CPAF	Lockheed Martin/ NJ	15,073	0	N/A	0	N/A	15,073
JCR		Various	278	0	N/A	0	N/A	278
Subtotal Product Development			92,833	0		0		92833
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Japan Cooperative Program								
	SS/CPFF	NSWC/DD/ VA	4,812	0	N/A	0	N/A	4,812
	SS/CPFF	NSWC/PHD/ CA	895	0	N/A	0	N/A	895
	SS/CPFF	JHU/APL/ MD	5,493	0	N/A	0	N/A	5,493
	Various	Various/ Various	2,280	0	N/A	0	N/A	2,280
	SS/MIPR	NAWC/CL/ CA	725	0	N/A	0	N/A	725
	SS/MIPR	ANTEON/ VA	4,297	0	N/A	0	N/A	4,297











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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPFF	PARADIGM/ VA	443	0	N/A	0	N/A	443
		MDA/ VA	2,994	0	N/A	0	N/A	2,994
	SS	NAVSEA/ DC	1,531	0	N/A	0	N/A	1,531
	SS/CPAF	Lockheed Martin/ NJ	3,032	0	N/A	0	N/A	3,032
Subtotal Support Costs			26,502	0		0		26502
Remarks								
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Japan Cooperative Program								
Test & Evaluation	MIPR	PMRF/ HI	190	0	N/A	0	N/A	190
	MIPR	NSWC/PHD/ CA	1,159	0	N/A	0	N/A	1,159
	MIPR	NAWC/PM/ CA	610	0	N/A	0	N/A	610
	MIPR	NSWC/Corona/ CA	735	0	N/A	0	N/A	735
	MIPR	NSWC/DD/ VA	368	0	N/A	0	N/A	368

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
	SS/CPFF	JHU/APL/ MD	260	0	N/A	0	N/A	260
	Various	Various	401	0	N/A	0	N/A	401
Subtotal Test and Evaluation			3,723	0		0		3723
Remarks								
 IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services								
Remarks								
Project Total Cost			123,058	0		0		123,058
Remarks								

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																	Date February 2006												
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)													R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Development Milestones																													
Ship System and VLS Critical Design Review		▲																											
	Legend																												
	    		Significant Event (complete)										    		Significant Event (planned)														
			Milestone Decision (complete)												Milestone Decision (planned)														
			Element Test (complete)												Element Test (planned)														
			System Level Test (complete)												System Level Test (planned)														
Complete Activity										Planned Activity																			

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Development Milestones							
Ship System and VLS Critical Design Review	2Q						
FY05 events shown only; the full JCR/SCD schedule is shown in PE 0603892C, BMD Aegis.							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment			
COST (\$ in Thousands)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0602 Program-Wide Support	122,395	35,626	49,121	81,890	30,508	72,077	33,539
RDT&E Articles Qty	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program such as strategic planning, program integration, business management, cost estimating, contracting, and financial management, to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuation on a limited number of foreign contracts.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Civilian Salaries and Support	122,395	35,626	49,121
RDT&E Articles (Quantity)	0	0	0

See Section A: Mission Description and Budget Item Justification

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				
C. Other Program Funding Summary								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	224,016	162,297	197,707	192,034	203,946	212,106	218,002	1,410,108
PE 0603879C Advanced Concepts, Evaluations and Systems	166,996	0	0	0	0	0	0	166,996
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	914,063	1,198,860	1,037,203	878,540	615,005	731,692	482,362	5,857,725
PE 0603883C Ballistic Missile Defense Boost Defense Segment	472,543	490,863	632,028	567,493	493,842	615,859	988,731	4,261,359
PE 0603884C Ballistic Missile Defense Sensors	567,193	294,283	536,428	554,012	623,089	306,965	217,590	3,099,560
PE 0603886C Ballistic Missile Defense System Interceptors	272,064	215,952	438,287	634,709	1,138,597	1,391,301	1,499,204	5,590,114
PE 0603888C Ballistic Missile Defense Test and Targets	700,570	632,107	692,209	614,174	649,766	668,624	678,105	4,635,555
PE 0603889C Ballistic Missile Defense Products	384,935	394,652	521,640	517,507	534,429	530,893	531,219	3,415,275
PE 0603890C Ballistic Missile Defense System Core	398,852	420,151	558,231	557,880	561,003	548,354	554,731	3,599,202
PE 0603891C Special Programs - MDA	0	324,522	421,303	836,168	1,110,695	1,027,677	1,260,497	4,980,862
PE 0603892C Ballistic Missile Defense Aegis	0	939,066	990,565	857,832	900,265	933,815	816,206	5,437,749
PE 0603893C Space Tracking & Surveillance System	0	239,998	361,515	429,679	640,367	787,008	818,606	3,277,173
PE 0603894C Multiple Kill Vehicle	0	83,000	220,370	273,805	307,566	309,284	115,119	1,309,144
PE 0603895C BMD System Space Program	0	0	0	45,000	150,000	166,000	206,100	567,100
PE 0605502C Small Business Innovative Research - MDA	138,907	0	0	0	0	0	0	138,907
PE 0901585C Pentagon Reservation	11,001	17,386	15,586	6,058	6,376	4,490	4,725	65,622
PE 0901598C Management Headquarters - MDA	110,662	99,327	89,314	86,821	86,244	70,600	70,714	613,682
PE Air Force Military Personnel	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
PE Air Force Operations and Maintenance	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
PE Air Force Other Procurement	0	2,400	1,453	11,279	386	17,710	25,709	58,937
PE Army Operations and Maintenance	49,597	66,974	68,246	69,809	71,472	73,325	75,230	474,653
PE Army Natl Guard Military Personnel	21,000	17,648	24,432	24,952	25,591	25,591	25,591	164,805
PE Army Natl Guard Operations and Maintenance	0	155	151	150	154	164	167	941
PE Navy Operations and Maintenance	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PE PAC-3/MEADS Missile Procurement	574,972	581,924	578,579	660,584	616,020	509,032	738,679	4,259,790
PE PAC-3/MEADS RDT&E	344,978	304,973	336,959	465,395	521,791	522,418	502,961	2,999,475

Project: 0602 Program-Wide Support

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